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HOMŒOPATHIC

PHARMACOPŒIA,

COMPILED

BY ORDER OF THE GERMAN CENTRAL UNION OF HOMŒOPATHIC PHYSICIANS

AND EDITED

FOR THE USE OF PHARMACEUTISTS

BY

CARL ERNST GRUNER,
APOTHECARY IN DRESDEN.

AUTHORISED ENGLISH EDITION,

TRANSLATED FROM THE SECOND GERMAN EDITION.

LEIPSIC:
C H. A R N O L D.
1855.

LONDON:
WILLIAMS & NORGATE.

NEW-YORK:
WESTERMANN & CO.

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CONTENTS.

Page

Introduction 1

PART I.

CONTAINING THE GENERAL RULES.

§ 1. Preliminary Remarks 11
– 2. Working Rooms 12
– 3. Vessels, Utensils and Requisites . . . . . —
– 4. Mechanical Labours 14
– 5. Triturations . . . . . —
– 6. Dissolution of the Triturations 18
– 7. Designation of the Glasses . . . . . —
– 8. Dissolution of Salts, Oils etc. 19
– 9. Precautionary Rules for solutions . . . . . —
– 10. Attenuation of Tinctures 20
– 11. Preparation of Tinctures 21
First Class (Rule 1) . . . . . —
Second Class (Rule 2) 22
Third Class (Rule 3) 23
– 12. Selection of vegetable Substances . . . . . —
– 13. Selection of Simples 24
– 14. Spirit of Wine 26
– 15. Purification of Spirit of Wine 27
– 16. Diluted Spirit of Wine 28
– 17. Strong Alkohol (Alkohol Fortius) . . . . . —
– 18. Water 29
– 19. Sugar of Milk 30

12894

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Page

§ 20. Globules 34
- 21. Preservation of the Medicinal Stock . . . . . —
- 22. Arrangement of the Dispensary 33
- 23. Of Dispensing . . . . . —

PART II.

DESCRIPTION OF THE MEDICINES AND THEIR PREPARATION.

Page

Absinthium 35
Acidum benzoicum . . . . . —
— hydrocyanicum . . . 36
— hydrofluoricum . . . 37
— molybdænicum . . . 38
— muriaticum . . . . . —
— nitricum 39
— oxalicum . . . . . —
— phosphoricum 40
— sulphuricum 41
— tartaricum . . . . . —
Aconitum (Napellus) 42
— Lycoctonum 43
Actæa . . . . . —
Æthusa 44
Agaricus . . . . . —
Agnus castus 45
Alcohol sulphuris . . . . . —
Allium 46
Aloe . . . . . —
Alumen . . . . . —
Ambra 47
Ammoniacum . . . . . —
Ammonium carbonicum . . . 48
— causticum . . . . . —
— muriaticum 49
— phosphoricum 50
Anacardium . . . . . —
Anagallis . . . . . —
Angelica 51
Angustura . . . . . —

Page

Anisum stellatum 52
Anthrakokali 53
Antimonium 54
Apis . . . . . —
Aranea 55
Argentum . . . . . —
Argentum nitricum 56
Argilla . . . . . —
Aristolochia 57
Armoracia . . . . . —
Arnica 58
Emplastrum Arnicæ. 59
Arsenicum . . . . . —
Artemisia 60
Arum . . . . . —
Asafœtida 61
Asarum . . . . . —
Asparagus 62
Atriplex . . . . . —
Auripigmentum 63
Aurum . . . . . —
— muriaticum 64
— muriat. natronat. . . . —
— sulphuratum . . . . —
Badiaga 65
Baryta acetica . . . . . —
— carbonica . . . . . —
— muriatica 66
Belladonna . . . . . —
Berberis 67
Bismuthum . . . . . —

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	Page		Page
Borax	68	Cinnabaris	91
Bovista	—	Cinnamomum	—
Branca ursina	69	Cistus	—
Bromium	—	Clematis	92
Brucea	70	Coccionella	—
Bryonia	71	Cocculus	93
Cadmium	—	Coccus Cacti	—
Cainca	73	Coffea	94
Caladium	—	Colchicum	—
Calcaria acetica	—	Colocynthis	95
— arsenicica	74	Columbo	—
— carbonica	—	Conium	96
— caustica	75	Copaiva	97
— iodata	—	Corallium	—
— phosphorica	76	Cotyledon	—
— sulphurata	—	Crocus	98
— sulphurica	77	Croton	—
Calendula	—	Cubeba	99
Camphora	—	Cuprum	—
Cancer	78	— aceticum	100
Cannabis	—	— arsenicosum	101
Cannabis indica	79	— carbonicum	—
Cantharides	—	— sulphuricum	—
Capsicum	80	Cyclamen	102
Carbo animalis	—	Cyprinus	—
— vegetabilis	81	Dictamnus	—
Carduus Benedictus	—	Digitalis	103
— Marianus	82	Drosera	104
Cascarilla	—	Dulcamara	—
Castoreum	83	Elaterium	105
Causticum	—	Eugenia	—
Chamomilla	84	Euphorbium	106
Chelidonium	85	Euphrasia	—
Chenopodium	—	Evonymus	—
China	86	Ferrum	107
Chininum muriaticum	—	— aceticum	—
— phosphoricum	87	— carbonicum	108
— sulphuricum	—	— iodatum	109
Chloroform	—	— lacticum	—
Chlorum	88	— magneticum	110
Cicuta virosa	89	— muriaticum	—
Cina	90	— sulphuricum	111
Cinchonium sulphuricum	—	Filix	112

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

	Page		Page
Formica	112	Lithion carbonicum	132
Fragaria	113	Lobelia	133
Gentiana cruciata	—	Lolium	—
— lutea	—	Lupulus	134
Geum	114	Lycopodium	—
Ginseng	—	Magnesia carbonica	135
Glonoinum	115	— muriatica	136
Granatum	116	— sulphurica	—
Graphites	—	Majorana	—
Gratiola	117	Manganum aceticum	137
Guaco	118	— carbonicum	—
Guaiacum	—	— hyperoxydatum	138
Gutti	119	Marum verum	—
Hæmatoxylon	—	Meloe	139
Helianthus	—	Menyanthes	—
Heliotropium	120	Mercurialis perennis	140
Helleborus	—	Mercurius acetatus	—
Hyoscyamus	121	— biiodatus	141
Hypericum	—	— corrosivus	—
Ignatia	122	— dulcis	142
Indigo	—	— nitrosus	—
Iodum	123	— phosphoricus	143
Ipecacuanha	—	— præcipitat. alb.	—
Jacea	124	— — ruber	144
Jalappa	—	— protoiodatus	—
Jatropha	125	— solubilis	—
Juglans	—	— vivus	145
Juncus effusus	—	Mezereum	146
— pilosus	126	Millefolium	—
Kali bichromicum	—	Millepedes	147
— carbonicum	—	Molybdænum	—
— chloricum	127	Morphium	—
— hydriodicum	—	— aceticum	148
— hydrobromicum	128	— muriaticum	149
— nitricum	—	— sulphuricum	—
Kaolin	129	Moschus	—
Kermes	—	Murex purpurea	150
Kreosot	—	Natrum carbonicum	—
Lachesis	130	— muriaticum	151
Lactuca	131	— nitricum	—
Lamium	—	— sulphuratum	—
Laurocerasus	132	— sulphuricum	152
Ledum	—	Niccolum carbonicum	—

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	Page		Page
Nux moschata	153	Sabina	174
Nux vomica	—	Sambucus	—
Nymphæa lutea	154	Sanguinaria	175
Œnanthe	—	Sassafras	—
Oleander	155	Sassaparilla	—
Oleum animale	—	Scilla	176
— Terebinthinæ	156	Scrophularia	177
Ononis	—	Secale cornutum	178
Opium	157	Sedum acre	179
Oreoselinum	—	Selenium	—
Pæonia	158	Senega	180
Paris	—	Senna	—
Petroleum	—	Sepia	181
Petroselinum	159	Serpentaria	—
Phellandrium	—	Silicea	182
Phosphorus	160	Solanum lycopersicum	—
Aether phosphoratus	—	— mammosum	183
Phytolacca	—	— nigrum	—
Pichurim	161	Spigelia	184
Pimpinella	—	Spongia	—
Pinus sylvestris	162	Stannum	185
Platina	—	Staphysagria	—
— muriatica	163	Stramonium	186
Plumbum	—	Strontia	—
— aceticum	164	Strichninum	187
— carbonicum	165	— nitricum	—
Podophyllum	—	— sulphuricum	188
Prunus Padus	166	Sulphur	—
— spinosa	—	Tinctura Sulphuris	—
Pulsatilla	—	Sulphur auratum	189
Ranunculus acris	167	Sumbul	190
— bulbosus	168	Symphytum	191
— Flammula	—	Tabacum	—
— sceleratus	169	Tanacetum	192
Raphanus	—	Taraxacum	—
Ratanhia	170	Tartarus stibiatus	—
Rheum	—	Taxus	193
Rhododendron	171	Tellur	—
Rhus toxicodendron	—	Thea	194
— vernix	172	Thuja	195
Rosmarinus	—	Tilia	—
Ruta	173	Tinctura acris sine Kali	196
Sabadilla	—	Tonco	—

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	Page		Page
Tussilago	197	Vinca	202
Ulmus	—	Viola	—
Urtica	198	Zincum	203
Uva Ursi	—	— aceticum	204
Valeriana	199	— hydrocyanicum . . .	—
Veratrinum	—	— oxydatum	—
Veratrum	200	— sulphuricum	205
Verbascum	201	Zingiber	206
Verbena	—		

A Catalogue of all the plants growing wild or cultivated in Germany as well as of some animals, being used in homœopathic medicine according direction of this work, arranged in the manner, in which the season offers them 207

Index 210

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INTRODUCTION.

Homœopathy employs mostly no other medicinal substances than those which in other methods of medical science have been known and approved long since, derived from the superabundant source of kind Nature, and prepared and improved with the assistance of art and science.

It differs from them only — distinguishing itself to its own advantage — in so much as its immortal author, with prophetic foresight, partly discovered quantity of substances as being sanative, which were till then unknown, partly that he taught how to prepare the substances already known according to rules newer and more to the purpose, through the observance of which latent powers may be disengaged, feeble ones strengthened, and that he decidedly rejected the combination of several medicines in one dose. The supreme principle of homœopathic pharmacy is at the same time to change the natural condition of the medicinal substances (that is to say, their essential properties) as little as possible.

Though in substance the doctrine of preparing medicines among the homœopathists goes truly hand in hand with the principles of chemistry and the rules of pharmacy, nay, is founded upon them, it notwithstanding demands in many cases essential deviations and additions, without the knowledge and application of which the apothecary, may he be able and accomplished, is not competent for answering all the claims of that system.

Nobody will confute this principle of experience, who only has superficially penetrated into the nature of homœopathy; and its acknowledgment has called forth since Hahnemann's first public communications a series of single works as well as of pharmacotechnical guidebooks, whose contents are of very different value. These efforts have attained their point but very imperfectly, because partly they stand isolated, following up onesided views, or because partly

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they are without a scientific basis, lastly, because they wanted everywhere that authority without which they could not acquire general acceptance and introduction, even if they were of acknowledged value. Till now, therefore, the general exigency of a work, comprehensive and based upon scientific experience continues to remain more deeply felt from year to year.

The authors of those works kept their attention especially upon the *medical* public, to whom they wished to hand over a guide for preparing the homœopathic medicines: this aim on one side required a great many explanations, necessary for the tyro in pharmacotechnics, whereas they presented on the other side to the pharmaceutist many voids and imperfections, whose appearance will be explained especially by the authors' being more or less initiated in the pharmaceutical sciences.

But the more convincing the truth gradually appeared, that it is impossible for physicians, whose sphere of activity is so extensive in itself, to be sufficiently skilled in preparing such a mass of medicinal supplies, partly based upon difficult chemical processes, and also requiring the possession of a complete laboratory (far more impossible for persons not at all versed in medical and pharmaceutical knowledge), the more certainly this experience must lead back to the natural point of view, which had been deranged by one-sided, quite unfounded zeal, and mistrust, that is to the aid and cooperation of pharmacy, which alone is fit and prepared for cultivating the great field, from whose produce thousands of sufferers hope for alleviation and recovery.

It is not the task of this work, to settle the dispute carried on for a long time and often very passionately on both sides, about the right and calling of the pharmaceutists for *exclusive* preparation of the homœopathic medicines: here rather may be sufficient the necessity above pointed out, enjoined by the nature of things, which is conditional for the restitution of the *right* position of both parties. But if it is to be granted that the mistrust of physicians as well as of the public, existing from the beginning, was often brought about from the pharmaceutists themselves, there must be pointed out for explanation and foundation of such mistrust, that very many, their possibly imaginable innermost motives not regarded, incurred this mistrust already alone through *their* taking a party. But it is impossible that men can claim confidence in a matter, *against* which they have pronounced themselves by ridiculing and

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degrading it, or at least through onesided judgments and such that were not derived from experience.

The author regarded it always as an error, a mistake of the right point of view, to allow himself decisions about the virtue of homœopathic medicinal doses. To decide this question is not at all the sphere of the apothecary's responsibility; might he wish the contrary? or has he presumed it to be necessary or proper in respect to allopathic medicines?

To adopt and adhere to the principle of perfect neutrality is indeed the first condition for re-obtaining the confidence lost or withheld; and it will and must return by little and little in the same degree as the apothecaries will be ready to satisfy all just and wellfounded claims of the homœopathic medicine, whereas *this*, on its side, gets by calmly trying nearer to the conviction that the former extravagant conditions, not seldom shewing openly the proof of impractibility, may be dismissed without impairing the value and essence of the matter *.

After this little digression, by means of which the author regarded it as his duty to deliver his open and unfeigned confession of faith, which, as he wishes for, may get very many and sincere adherents, he resumes his point.

Far from overrating his powers, the difficulties of the task stood alive before the author's mind; he tried the existing means thoroughly and sifted them carefully: neglecting altogether nothing that seemed necessary for promoting the qualification of his labour. Notwithstanding he cannot clear all his doubts as to the results of his endeavours introuding his mind, as he submits now the com-

* This is no empty supposition; the transactions of the homœopathic central union speak for a series of years in favour of it; many valuable treatises in periodicals attest it; it is lastly the honourable commission which proves it, with which the author has been favoured by the worshipful assembly of the said union in August 1839 at Leipzig (though at that time indeed only *indirectly*); but later, in consequence of it, in 1842 detailed and profound transactions took place between the author of this work and the commissioners, before he dared to believe himself sufficiently authorized for beginning it. But nothing is more proper for confirming the truth of this principle and the suppositions based upon it, than the experience that, since the first appearance of this work to the most recent times (that is within nine years), homœopathy has taken with its medicines its place in the pharmacies both of Germany and foreign civilized countries in the same proportion and extent, as the earnest and conscientious exertions of the pharmaceutists have regained for themselves in this field the confidence both of the physicians and the public.

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pleted work to the medical and pharmaceutical public. It is a duty, due to himself, to state, for mediating a wellfounded opinion of his work, the point of view from which he must wish for to have it judged, lest something might be claimed from him, that to present he did not intend to include in his plan, or something might be criticized, that must be found as having its reason in the manner in which he conceived the task.

He accordingly refers to the above stated hints placing *the* view at the head above all, that the present work is intended and arranged, if not exclusively, yet especially for the use of the apothecaries. Hence follows the arrangement and order, so essentially departing from that of his predecessors, because *the* public whom it is to serve for use and rule, is quite *another*, already endowed with all required scientific and technical means, rendering consequently very many statements, explanations and directions now quite superfluous, which seemed formerly not to be done without, and which the authors of former similar works thought indispensable.

This very circumstance gave rise to a not inconsiderable difficulty for him, as it must be experienced by everybody who intends to stand forth as a mediator between opposing parties. He feels persuaded, that he may not have succeeded in happily evading by his zealous efforts here the reproaches of being more prolix than was necessary, there the being criticized for defective brevity. This, notwithstanding, will give him very little trouble, in as much as he believes, that he may hope his work will procure for itself, through its being used, a satisfying judgment, whatever theory and caprice may have found to censure beforehand.

In devising his plan for the work he proposed himself therefore the following tasks:

To treat *in the first part* the kind and quality of the necessary utensils and requisites as well as the statement of the best manners of handling them and of the methods, only in so far more largely, as they differ essentially from those, which are established already in the offices of the pharmaceutists or have been totally foreign to them till now.

Now if an unnecessary repetition of things long known can be saved in this way, it becomes the more the author's duty to treat more accurately and prolix the proceedings exclusively essential to the principles of homœopathy, in which this finds in preference a condition of the virtue of its medicines; and the imperfect fulfilling

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of which condition may have given a reason for just complaints and distrust here and there. This view will be a sufficient justification for having treated the statements about the exterior quality and sifting of the medicinal bodies to be used, often with a greater prolixity than it may seem necessary at first sight for many persons.

The author made it his principle thereby to keep aloof from all purely theoretical explanations and hypotheses; as he could neither present any thing more new, nor approve of all that which existed already. These doctrines do neither belong to the art of preparing medicines, and he who seeks for them, will well know how to derive them from their best sources.

All that is good and serviceable to the purpose in the original prescriptions of Hahnemann ought to find its place here again, though reserving the full liberty of applying the modifications wellfounded through experience as serving the purpose both in itself and in the lapse of time. But some few prescriptions, exclusively belonging to the author of the system and to his views, have been introduced again quite literally, only for the sake of completeness and out of respect for practical experience.

The present work being especially intended for the use of pharmaceutists, this will sufficiently explain, that in the second part the preparation of purely chemical medicines has been stated in a very short manner only, which often has for its basis, in respect to the preparations long since received among the medicinal treasures, the most widely spread Prussian or the Saxon Pharmacopœia. Where these did not satisfy, either Berzelius' Compendium of Chemistry, or Geiger's Handbook of Pharmacy, or Duflos' Handbook of the Pharmaceutical Praxis, as well as Dr. Fr. Mohr's Commentary to the sixth edition of the Prussian Pharmacopœia have been consulted. All special treatings about the history, characteristics and means for testing the genuineness, purity and good qualities therefore have been omitted as being superfluous for the pharmaceutist *here*, and foreign to the main purpose of the task; as the apothecary is once for all bound by duty for and directed to it, whereas the tyro, on the contrary, would be in need of very compendious comments, which would surpass the limits of this work more than double its size.

Moreover it may be remarked that, as the intrinsic quality of medicines everywhere and at all times perfectly uniform, constitutes by right a capital demand of homœopathists, no apothecary is

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allowed to forego the care of preparing the medicines for *homoeopathic* purposes after the prescription laid down in *this work*, if he used others as a basis for his officinal medicines. For it is not at all to be regarded with indifference after which pharmacopœia the medicine to be administered is prepared, if it agrees only in its name and outer appearance with that which is prescribed here. All this needs no further explanation for the professional man *.

In the same way the botanical part of the work has been treated; there was to be found out the medium between the prolix profoundness of a systematical handbook and the scanty, not seldom insufficient shortness of some pharmacopœias. The author has done his best to put together all essential characteristics in diagnostic as concise as possible and fixed his attention especially upon the possibility of a mistake with a kindred species.

He believed it to be necessary to treat with more prolixity the foreign articles, coming in as dry drugs, for directing the attention of such persons who have not like the apothecary daily occasion and cause for comparative testing on account of possible mistakes. He does not fear by this to be blamed for the entire omission of the description of the nature of the plants or animals, furnishing the officinal parts, being ready to acknowledge to be this valuable as to system and natural philosophy, but no practical consideration *for the purpose of the work*. But he believed himself not to be allowed to withhold the partly obsolete synonyms of chemical and botanical or pharmacological articles, because the study of older works and popular remedies continues yet to occupy many homœopathists. As regards the superscriptions of the single articles it seemed best to preserve the mode of signification introduced in other homœopathic works and which is already generally adopted. The author departed from this principle only where it was openly defective and must be acknowledged as leading to mistakes. These practical motives justify or excuse the want

* Though this position is clear enough and perfectly founded logically it has led to the mistaken construction, that the author regarded his labours and views to be the most perfect, ever to be brought forth. To everybody who needs an explanation about this I briefly point out the great and essential differences prevalent in the prescriptions of the pharmacopœias of the several countries, viz. for *Mercurius dulcis* and *solubilis*, for *Kermes* and *Sulphur auratum*, for *Zincum oxydatum*, and for so monay other preparations; as also for the proportions of tinctures, so frequently different from each other etc.

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of a consequently accomplished nomenclature when obsolete, but not yet forgotten names like Antimonium, Kermes, Sulphur auratum and the like appear by the side of the new manner of signification carried out in most pharmacopœias.

What considerable value for the whole science of drugs in general the study and use of illustrations, really good and being true copies of nature, offer, is above all question; the author therefore has endeavoured to inquire after the best illustrations, both of entire plants and drugs, in so far as they came through personal inspection under his judgment and to cite them, whereby he hopes to deserve some thanks. And hereby also he was led by the view given in the precedent sentence.

The works used are the following:

1) *Dr. Göbel's pharmaceutische Waarenkunde mit illuminirten Kupfern, fortgesetzt von Dr. G. Kunze. 2 Bde. in 4. Eisenach 1834.*

2) *Brandt und Ratzeburg, Abbildung und Beschreibung der in Deutschland wildwachsenden und in Gärten im Freien ausdauernden Giftgewächse. 2 Abtheilungen mit illuminirten Kupfern in 4. Berlin 1834.*

3) *Derselben Verfasser getreue Darstellung und Beschreibung der Thiere etc. mit illuminirten Kupfern. 2 Bde. in 4. Berlin 1833.*

4) *Hayne, getreue Darstellung und Beschreibung der in der Arzneikunde gebräuchlichen Gewächse. 12 Bde. in 4. mit illuminirten Kupfertafeln. Berlin 1833.*

5) *Sammlung officineller Pflanzen mit lithographischen illuminirten Abbildungen mit Beschreibungen von Weyhe, Dr. Walter, Funke und Dr. Nees von Esenbeck. 3 Foliobände und 1 Bd. Text. Berlin 1828.*

To these works refer the abbreviated quotations in the respective articles immediately after the systemical classification, in which for brevity's sake the Roman figures denote the volume, the Arabic the plate.

Besides these, for the botanical and pharmacological part have also been used *Geiger's* Handbook of Pharmacy, *Doebereiner's* German Apothecaries' manual; *H. A. Martius'* Compendium of Pharmaceutical Zoology and *Kosteletzky's* General Medico-Pharmaceutical Botanics.

It is the author's indispensable duty to mention gratefully all these learned works, for he often must own to himself, that

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without their excellent guidance his powers would not have been a match for the work he undertook.

As to the selection of the single parts of plants for medicinal use and the time of their collection many a deviation from the prescriptions of Hahnemann will be found. May this not be a subject for reproaches, but may it be borne in mind, that the author truly followed the first summons of the great master "*try all*". And he hopes, he will be found making his selection with conscientious use of all means at his disposal.

As little he should be blamed for not having regarded so many new propositions, especially the separate preparation of different parts of the same plant, or peculiar devious form of prepa-ration (for instance trituration of green vegetables). He aimed always at the most possible simplification and therein founded uniformity of the medicines, and this aim has also been adopted as fundamental condition on the part of his employers. Every individual physician is at liberty to have medicines prepared for *his* own use after his own order, but the officinal ones should be and continue always the same every where.

The author must yet justify the essential departures he has allowed himself in substituting the decimal system for the centesimal proportions. Though Hahnemann had established the latter for his triturations as well as for all his liquid attenuations, yet many have departed since from that system. There had been proposed to adopt rather 2 : 98, next 5 : 95, finally 10 : 90, and there was no want of reasons for each of these modifications. The strongest argument, without doubt, is the pure arithmethical argument that $^1/_{10}$ contains more and must be certainly more efficacious than $^1/_{100}$. But there is in a proportion of 10 to 10 a more consequent and close gradation than in the original one.

Whatever be objected against this, it is necessary to avoid such arbitrariness and fluctuations; therefore only *one* scale could be established as a rule. Now that the decimal proportion was selected, is based not alone upon the circumstance that the acceptation of it extends itself by experience in practice farther and farther, but also upon the express consent of the gentlemen giving the order.

To the satisfaction and observance of those insisting upon the familiar centesimal system it will be sufficient to point out, how easy it is to find the potency of Hahnemann after the decimal-system; for according to the arithmetical proportion

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the 1st. potency of Hahnemann corresponds exactly to the 2d. decimal potency.
the 2d. potency of Hahnemann corresponds exactly to the 4th. decimal potency.
the 3d. potency of Hahnemann corresponds exactly to the 6th. decimal potency, and so forth.

But he for whom it is of importance to learn from the number of the potency always the quantitative proportion, will find it out after the decimal system with greatest ease and certainty, having only to add the number of zeros behind a 1 equal to the number of the potency, for instance 1st. potency = $^1/_{10}$, 2d. potency = $^1/_{100}$, 6th. potency = $^1/_{1000000}$, and so on.

These are the essential points of the plan which the author devised in consequence of an invitation he got, and submitted to several physicians selected at the annual meeting of 1839 for this purpose. The received written and oral judgments upon it, must be the more encouraging for him as they agreed all with him in the main points, and anew confirmed the high honourable confidence the commissioned can boast of.

That the opinion of impartial competent judges has decided in favour of the work undertaken, is most clearly proved through the increasing demands for a new complete edition notwithstanding several other books on similar subjects have meanwhile appeared.

In the like manner as the system of homœopathy makes continual progress, the pharmacotechnics are not to be regarded for a concluded and consummated doctrine; in this line of science also the new will substitute the older, if it is the better one. — In this sense the author has already prepared since many years this second edition by continuous revisal, observation and collection of his own experience as well as that of others; he has endeavoured to simplify and improve many a prescription and also paid his best attention to the newly discovered remedies.

The Northamerican „*Prüferverein*“ (union of experimentators) conducted by the indefatigable Dr. *Hering* has enriched the medicinal stock with a large number of such new medicines the preparation of which is for the most part impracticable in Europe, because the primitive matter, animal and vegetable, belongs to the far Tropic countries, from whence they can be drawn not at all, or at least only under the greatest difficulties. When from this motive their collection and technical preparation must be left to the physicians and apothecaries on the other side of the ocean, so the author

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could not think in respect of the proposed task of having reasons for both, neither their mere enumeration with or without their descriptions, nor of this being useful for his aim, the less so as after the principle of fixing by and dividing his prescriptions the most proper preparation is easily and certain found for any later discovered remedy.

Finally he thinks it necessary to assure, that neither vanity, nor selfishness has been the motive for his undertaking to which he readily devoted his leisure hours; which the business of his calling, and the administration of several public offices left him very few in number; but solely the firm persuasion that a guide for homœopathic pharmacotechnics *in the sense of scientific and experimental progress* was highly wanted, and supported by the call of many physicians acting under the like impression.

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PART I.

CONTAINING THE GENERAL RULES.

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§. 1.

PRELIMINARY REMARKS.

When the physicians of all systems justly did find in the true pureness and efficacy of the remedies to be administered the main condition of the effect aimed at, the homœopathic physician will not be blamed for making claims above all in this respect, the comparative larger extent and strictness of which is justified in itself, in as much as from the smallness of his doses the most positive certainty of their efficacy is the condition the more necessary.

Therefore it is the first duty of everyone, who will undertake the preparation of homœopathic medicines to make himself acquainted with the demands distinguishing this school from the older one, for being able to make its prescriptions his strict and invariable direction. Only he who follows this principle with earnest faithfulness to his duty, will succeed in preparing medicines, ascertaining experimental certain effect, and will obtain and maintain thereby the confidence of the physicians. Whatever his opinion may be about the value and importance of the given prescriptions, even the thought of unnecessary pedantry, intruding itself here and there, must not prevent him from conscientiously obeying them. This performance of duty will be the more easy for him, the more he gets convinced, that time and experience have already effaced not inconsiderable part of the former often extravagant demands and harsh theorems, and have lowered its extent to its essential constituent, but which can not be lessened now, without endangering the purpose.

After having given this main principle beforehand, which, as we must recommend our colleagues who wish to dedicate themselves to homœopathy, and which they may take seriously to heart, we begin with the several labours it requires, after having before only given a short description of the condition of the necessary utensils.

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In general other arrangements and instruments than those common and used in every good pharmacy, are not necessary, their application and handling only require greater care.

§. 2.

WORKING-ROOMS.

The eduction of the chemical preparations cannot be shut out of the offices destined for them, the chemical laboratories, these alone furnishing the required accommodations. But as to the more mechanical part of the labours — pounding, cutting, trituration etc. — which are necessary for further working out the preparations as well as the raw natural bodies for medicinal use, it is indeed indispensable, with regard to the best possible prevention of all mechanical or other adulterations, to arrange exclusively a separate room for these purposes. This must be dry, airy, light, likewise protected as well against the intrusion of the sun's rays as against smoke, damp vapours and dust from the neighbourhood, and must be remote from all such things around, whose atmosphere might exert some disordering influence upon the pure air of the room.

§. 3.

VESSELS, UTENSILS AND REQUISITES.

In this room also shall be preserved all utensils and vessels intended exclusively for this service, and which are not allowed to be used for other labours; this applies especially to the vessels for trituration, the glasses, stoppers, scales, spoons, spatulæ etc. Copper and brass vessels must be rejected absolutely; where the hardness or tenacity of some substances render the use of a metal mortar unavoidable, an iron one is to be selected, the inner side of which must be polished and always clean; besides mortars made of the hardest white marble with hard wooden pestles will do in general; for triturations only unglazed porcelain mortars are the fittest, which must be there in sufficient number of different sizes; for the use of mortars made of serpentine is not allowed, their mass being too soft.

As for preliminary comminution of fresh roots and herbs a cutter is necessary, and care must be taken, that it is always free from rust; for the oxide of iron exerts an instantaneous decomposing influence upon many vegetable juices. The like attention

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is also required for the supporting-blocks and boards, whose immediate cleaning after use is indispensable.

For forcing out vegetable juices the common bag or cloth made of bleached linen may be used; but never the same bag is to be taken for pressing out different vegetables; odour, taste and colour is so permanently impregnated to the cloth, that no washing is sufficient for removing it. *

For effective separation of the liquid from the vegetable fibre the aid of the press may be employed; yet only a porcelain, stone or — as an exception from the rule for tinctures — a tin press dish.

All glasses, whatever use they may be intended for, must be washed with hot water and afterwards rinsed again with pure; and as soon as the water is run off, they must be completely made dry in a hot stove under strong heat. It is the same with the glasses intended for the preservation of medicinal stores.

Among all means for stopping the glasses, whether in use or proposed, the corkstoppers always maintain the preference, answering for their elasticity most perfectly to the purpose. They must be selected with the utmost care, because all that are hard, very porous, and of dark colour, are to be rejected. To boil them out or to soak them in boiling water is not to be recommended, because they lose in it their regular form and get a dark colour. When they do not more stop properly, have become too much softened, we fail not to take others in their place. Of course all liquids corroding the substance of stoppers must be preserved in glasses having glass stoppers.

Attention lastly must be adverted again to what has been remarked above in respect to iron utensils, namely, that the utmost cleanliness of all utensils is to be observed. Long continued trituration causes often the substance under work to adhere so much to the vessels, that often repeated washing is quite insufficient, and, therefore each mortar must be scoured out with fine sand, aided by the force of the arm; and smells that happen to be in them must be removed by the heat of a stove. If metals have been triturated a proper acid must be employed for dissolving the parts sticking fast to the mortar.

* By marking the bags and clothes with numbers, a control may be held, the expenses in buying so many are recovered by their longer duration, inasmuch as they are more seldom used.

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§. 4.

MECHANICAL LABOURS.

After having enumerated in the last paragraphs the essential requisites of the utensils, we now pass over to the various mechanical labours, reserving for especial cases what is not remarked here.

It is the task of the pharmaceutist in general to put all substances intended for medicinal use in such a condition as enables them to present their innate healing powers in the most perfectly developped degree, and in that form, in which physical nature absorbs them in the easiest and most perfect manner. This form in itself is divided in two main divisions, in that of the dry and that of the liquid remedies. All bodies which in conformity with their nature appear not fit for imparting their effective properties to liquid dissolvents require a treatment on the dry way, whereby the finest distribution of their substance is obtained (and in this manner the most complete assimilation is the animal body is brought about).

There could exist no means answering better to the purpose, than that which Hahnemann has taught us under the name of trituration. The best proceeding for its execution is as follows.

§. 5.

TRITURATIONS.

One part of the medicinal substance to be prepared is weighed exactly with the same quantity by weight of pure powdered sugar of milk (taking the latter rather coarsely powdered, if the substances be very solid and tenacious) are triturated in a roomy mortar under continuous attention, till both have been united to a compound, alike uniform in colour and fineness. As often as appears necessary, the mortar and pestle must be freed from the adherent substance by scraping it off with a wooden spatula or sharp hog's tooth. The uniformity of the preparation depends very much on this condition.

The time required for this first labour can neither be fixed by a general rule, nor can it be equal in comparing the single substances among themselves; for it lies upon one's hands that depending on their toughness, hardness, humidity a. s. o. there is the greatest variety among them. As a rule to be observed in all these cases, we

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remark that *none* of these first triturations can be regarded as finished in less than half an hour, even when the eye should be satisfied with their appearance. * As soon as one feels convinced that this previous labour acquired the necessary perfection, and especially that no parts of the medicinal substance exist separate, there is time to add a second portion of sugar of milk *three times as much* as the first quantity, and to unite them exactly by triturating for a quarter of an hour, alternately scraping off, as is above mentioned. This also done, the last portion of sugar of milk, which must be *five times as much* as the first quantity, is added, and again triturated so long a time, till a perfect uniform and subtle powder is obtained, in which little points of a different colour must not more be perceived through the magnifying glass. Such a complete trituration will, now, as we took to one part of the medicinal substance first one part of sugar of milk, next three and lastly five parts, be of the tenfold weight of the prepared substance. Is it designated *with one* (1).

From this first trituration one part by weight is taken and triturated with the ninefold quantity of pure sugar of milk, after the above given rule, only taking in the very beginning a somewhat larger quantity of sugar of milk (about the triple) may be worked with the medicine-potency and the whole labour finished in three quarters of an hour. In the same way from this trituration *to be designated with* 2 a third is made and *designated with* 3.

A previous preparation of the substances to be triturated facilitates and secures the success of this labour very much. First requisite is hereby perfect dryness of the preparations, as also of the sugar and the utensils. At the same time it is necessary to bring the harder and tougher substances before they are got together with the latter separately to the most finely divided state

* The limits of mechanical divisibility go far beyond the common means of observation; if therefore Hahnemann, a sharp observing man, demanded in regard to this, that no trituration ought to be completed in less than one hour, there was no pedantry in that; only the circumstance led to that appearance, that he laid down that rule in connexion with his theory of potencies without making an exception. Our own experience has suffiently shewn us, that very many substances, are yet able to a still greater degree of division, after having been triturated for several hours, whereas others acquire the prescribed property in far less time. It requires no artful explication, in order to explain the strengthened efficacy of medicinal bodies divided in this manner; for the comminution renders them more divisible, therefore dissolvable in the body, and consequently more efficacious.

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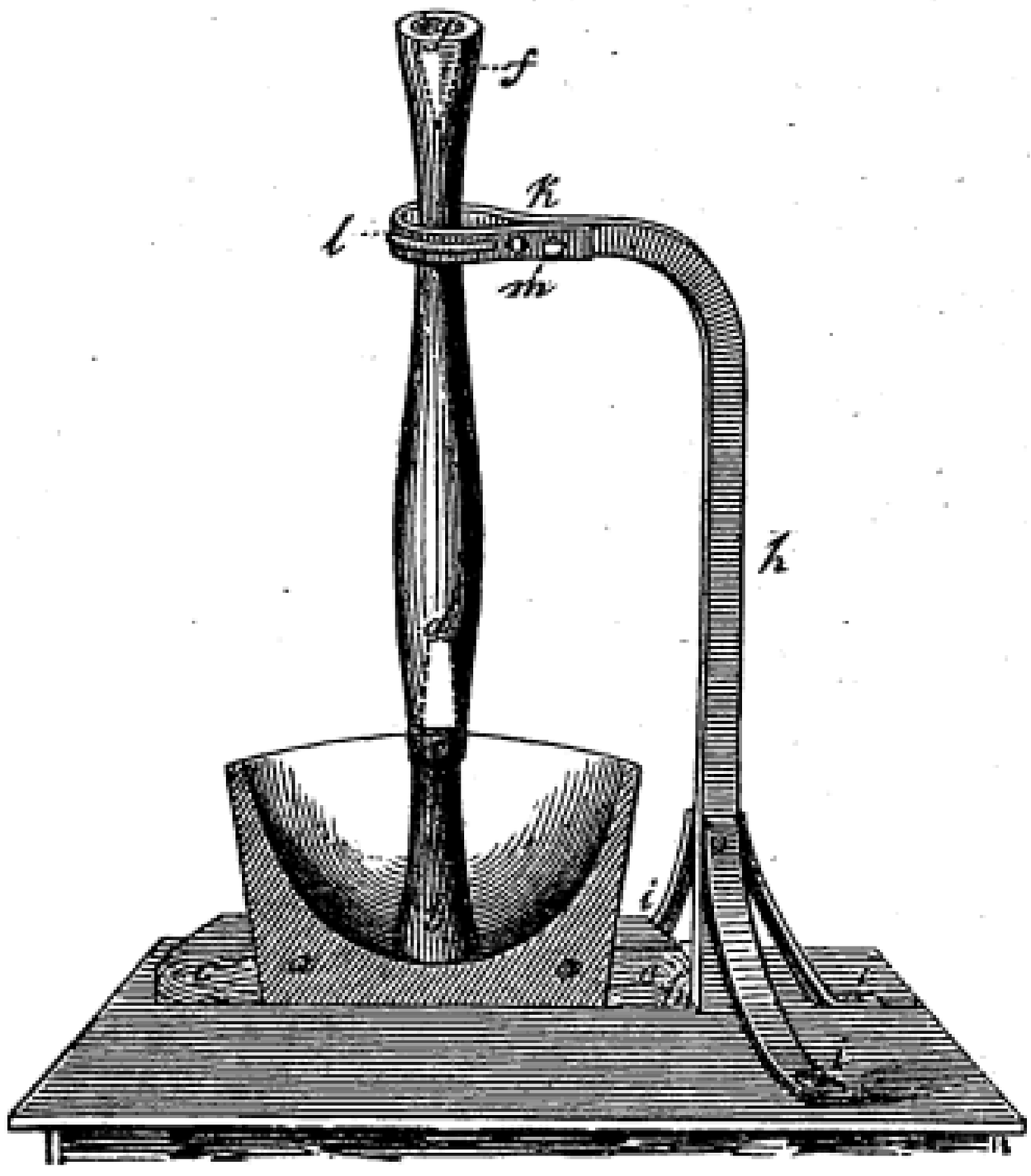
As to metals the proper proceeding will be described in the single articles. The grindstones used formerly are totally to be rejected as they indeed furnished a quantity of mud, but yielded only indefinite traces of metal for trituration; yet less successful is the proposed abrasion of metals on their fractured edges. Salts, precipitates, and the like must be reduced beforehand into a most subtle powder after the rule already known; it is the same with all vegetables.

As it is not allowed to do this labour in a room in which through other labours the trituration may be spoiled by dust, damp vapours, odours a. s. f., it would be likewise improper to undertake more than one trituration at the same time. In general there can never be devoted too much attention and care to this whole labour, what we cannot fail to recommend expressly. * Altogether it is not advisable to prepare more than

* This labour is so wearisome and monotonous that an abbreviation or at least simplification very often has been wished for, and to this effect different machines for trituration have been proposed. None is known to us, which we could recommend with confidence, all being more or less subject to the imperfections of machinery, and furnish — machine work. We, on the contrary, are of opinion that the hand of man *kept under an attentive eye and thinking mind* is the most perfect machine, to be had for this purpose, as long as patience and perseverance belong to the indispensable attributes of every pharmaceutist, claiming confidence. Essentially furthering triturations of very hard and very tough substances the following simple machine has been found, the illustration of which follows.



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500 grains at a time; for the efficiency and the success of the labour are in an inverse proportion with the quantity. Larger supplies as being used up during one year ought likewise not to be prepared, these, therefore, must be different after the consumption observed.

This process of working dry substances can be continued so far as is demanded; Hahnemann has closed it with the third trituration for bringing the further potencies in the liquid form *. His proceeding proved to be agreeable to the purpose, in as much as the solutions of such triturations verified their efficacy in many ways.

A common deep mortar or dish for trituration made of porcelain *a*, and such a pestle *b* is fixed by a frame or belt of hard wood corresponding in extent with its bottom and screwed fast upon a table. The pestle gets an elongation *d* of 16—24″ (like the chocolate machines formerly used); this is turned out of wood in proportion with the mortar and hollowed out on the under side that the pestle may by puttied in 4—6″ deep. A broad metal ring *e* closing fast, preserves this lower part from breaking out. Above the wooden stick is made thicker (*f*), getting the form of an inverted pestle, so that a sufficiently wide and deep hole (*g*) can be bored, to be filled with lead for augmenting its weight. Immediately at the side of the wooden frame in ascending direction, there is an iron bar (*h*) screwed fast to the table by three lobes through wooden screws (*i*), which must be so high as to be overtopped 4—6″ by the upper part of the elongated pestle for handling and guiding. This bar is bent to present in the said height a rightangled arm which is formed in vertical direction over the middle of the mortar into a ring (*k*), roomy enough for taking in the wooden pestle easy, but not wider as to allow the pestle to move easily in the ring, which is well lined with tough leather, without shaking. For being able to put in the pestle into the ring, this must have a hinge for opening (*l*) and a little knob that can be turned (*m*) for closing it fast again. The handling of this machine is a matter of course.

* The expressions "potency and potentisation" have in the homœopathical sense of the words (at least originally) a double meaning, viz. the meaning 1) of gradation, organisation, 2) of development of power or heightening after the theory of potencies of Hahnemann. We believe this hypothesis to become more and more forgotten, without the necessity of opposing to it, what many have done already. We therefore long sought for an expression to be selected for supplanting the designation of potency, and designating the first above named meaning exclusively and positively; but we have not been happy enough to find such a one that allowed at the same time to be employed so easily and clearly in all forms of words and speech, as the established word, potency, with its inflections and derivations, so familiar to all. We believe that it is best rather to retain the known word than to become unintelligible through the selection of new words, and only declare hereby that we wish to have put no other construction on the word than the purely arithmetical notion, that of gradation.

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§. 6.

DISSOLUTION OF THE TRITURATIONS.

This is effected by pouring over *one part* of the third trituration *nine* parts of distilled water, in a glass phial, only being filled up to two thirds of it, and by dissolving clearly through repeated shaking at common temperature. This solution is to be designated 4. It must be observed hereby that this is fit only for speedy use (especially as a transition) but noways for preserving it for a longer time, because the insoluble medicinal substances it contains separate, and though a new mechanical division may be obtained subsequently by means of shaking, this however might be suspected in reference to its chemical effects not without reason.

The transition to the purely alcoholic solutions is formed by the 5th. potency produced through mixture of one part of the 4th. potency with 9 parts of watered spirit of wine (q. v.). All further attenuations are continued in the same proportion of strong spirit, so far as the physician demands them.

§. 7.

DESIGNATION OF THE GLASSES.

To obviate in all cases mistakes and uncertainty the preparation of potencies must not be begun, before as many glasses (containing to 2 drachms each) as potencies are to be produced, have been placed one after the other and in just order, before one, provided both with stoppers (upon which likewise the name and number of the potency are inscribed) and labels pasted upon them, having distinct signatures and numbers of the potencies. These are filled up one after the other with a measuring glass, putting into the smaller 90, into the larger 180 drops of spirit of wine, then after dropping into the first glass, bearing the lowest number, 10 (resp. 20) drops of the medicine to be attenuated, the glass is closed with its stopper and the mixture effected by a short but vigorous agitation. From this first glass again 10 drops are put into the next, the mixture with the spirit of wine again effected by shaking, and so on, until the whole series has been attenuated in this manner.

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§. 8.

DISSOLUTION OF SALTS, OILS ETC.

For many remedies simple solution instead of trituration is employed, and this is especially the case with soluble salts, volatile oils and similar substances. Manifold reasons justify this deviation from the system of Hahnemann. By long continued trituration many not alone are soon partly unmixed, but several exert a decomposing influence on sugar of milk, which begins after the end of the labour, and is continued in the store-vessel, for which the sourish smell evolving itself after months is a sufficient proof. Deliquescent or volatile salts, volatile and fixed oils more easily show how evidently improper trituration is in such cases.

The process in preparing the solutions is so simple and well known that it needs no description. For salts, pure water, for volatile oils, the strongest alcohol is to be used as a dissolvent. Few cases excepted, the decimal system may be carried through here also, so that the first solution contains $^1/_{10}$ of the medicinal body, and therefore the prescribed manner of designation is preserved. Such salts as do not dissolve or remain dissolved in this proportion are dissolved in the proportion of $^1/_{20}$ (that is 5 parts to 95 parts); their first solution being not termed 1, but with the fractional number of their proportion. Through this mistakes and uncertainties are obviated. That from *such* a solution double the quantity (20:80) must be taken, for preparing a second solution answering arithmetically to the general proportion, is a matter of course, as well as the farther attenuation in the decimal proportion.

Lastly we must direct the attention to several matters which this form of medicine requires for securing the necessary certainty.

§. 9.

PRECAUTIONARY RULES FOR SOLUTIONS.

1. Solution must be always effected at common temperature (between 12 or 14° R.); and likewise the place for keeping of the medicine must be subjected as little as possible to changes of temperature for obviating crystallizing from cold, or condensation from heat. If the store-room be not a room fit for warming during winter, it would be necessary to remove all these solutions

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of salts before the appearance of frost and to preserve them well protected in an other place till this period is over.

2. From the same reason and for obviating possible decompositions these solutions must always be protected against the influence of the daylight.

3. As long only as the liquid is perfectly clear and transparent, it is yet fit for use; as soon as turbidness, flakes, rings in the glasses or sedimentary crystals appear, it must be rejected and prepared anew.

4. Attention always must be paid especially to a good condition of the stoppers, because they become easier corroded than from the spirituous attenuations. A coat of collodium, dried before use, perfectly preserves them a long time from intrusion of the solutions of salt.

5. For production of the second potency as is the case with the fifth potency from triturations, diluted spirit of wine must be taken; only from the third potency undiluted spirit may be used. Observation teaches us that some tinctures bear this change only from the third potency.

Such are the necessary rules for preparing dry medicines and for their being transferred into the liquid form. Before we pass over now to the preparation of Essences and Tinctures it seems proper to add those rules which are to be observed in their potentisation in as much as they also require several deviations.

The liquid medicines, commonly understood under the name of *Tinctures* are divided, as will be mentioned more explicitly below, in respect of the quantity of spirit of wine contained in them, in two different classes, to which difference also that of their means of attenuation must be adapted

§. 10.

ATTENUATION OF TINCTURES.

1. Tinctures prepared from *dry* vegetables and *strong* spirit of wine, are to be attenuated farther with *the same* after the above fixed decimal proportion. On the contrary

2. Tinctures prepared from *diluted* spirit of wine as well as the essences (which see), require in the first, sometimes still in the second potency a *diluted* spirit, that each may appear clear and without sediment; for such can never take place without essentially impairing the medicinal contents and is to be avoided carefully.

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After these premises we now pass over to the statement of the manner of preparing the medicines got from the vegetable kingdom, which require a different treatment according to the difference in their constituents and in their chemical properties.

§. 11.

PREPARATION OF TINCTURES.

For abbreviating the single articles to be treated in the second part, as well as for facilitating a systemical view it appeared proper to divide the different forms of medicines comprehended under the name of tinctures *in three classes* after the difference of the manner of their preparation, to obviate often repetition of already given prescriptions, reference to the class, to which the substance to be prepared belongs being only necessary.

FIRST CLASS.

(RULE 1.)

The *first class* accordingly is formed by all barks, roots, seeds, leaves etc. which are preserved and prepared in a dry state. Here the *general rule* is prevalent, that one part, after having been comminuted into a coarse powder previously, is poured over with ten parts of spirit of wine in a glass-vessel well secured with a piece of wet bladder, to be extracted for tincture, under daily-repeated vigorous shakings.

For obtaining an efficacious and powerful tincture from substances little solvable in spirit of wine, a previous trituration for hours, first dry, and then under addition of so much spirit as is necessary for forming a thick pulp will be of great advantage.

It is not necessary and rather injurious to apply a higher temperature than that of a common room (12—14° R.); likewise the influence of the sun's rays is improper, its decomposing effect being injurious.

After the lapse of the time stated the liquid is to be separated from the extracted substance according to the known rules by pressing; and after having been suffered to settle for twenty four hours, it is passed through white filtering-paper, and then preserved for use.

To the different nature of the efficient ingredients of this large class of medicines answering solvents must be provided. Of course it is evident that strong spirit of wine (containing 70 to 80%) can not be the most proper for all, but that on the contrary many

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substances will supply a more efficacious tincture when extracted with diluted spirit of wine. Now though we fix as a rule the application *of strong spirit of wine* (§. 15) for preparation of Tinctures and Essences, we reserve always to state the deviations necessary with the respective substances separately, and only remember, that this deviation does not influence the following of the rule mentioned. But wherever the peculiarity of one or the other substance should require an especial consideration, we shall add the necessary remarks in its place.

Fresh plants form an opposite class to the tinctures prepared from dried vegetables, subject to another rule. But these also are divided in two subdivisions according to the quantity of their own humidity and their being replete with juice.

SECOND CLASS.

(RULE 2.)

All those plants or such of their parts, as are to be prepared, containing so much juice, that it may be separated in sufficient quantity, that is after having been previously bruised in a mortar and forced out by a good effective press, form the *second class* and are handled accordingly. * But as this purely mechanical way does not always furnish all efficacious constituents for the liquid, because especially the fibrous substance partly retains the resinous and volatile ones, it is proper to extract these with spirit of wine separately. For this purpose a quantity of strong alcohol, equal to the weight of the juice obtained by pressing, is to be applied, *and not more*, even in case the remains should not be covered over with it. According to the warm temperature of the air, a space of one to three days may be allowed for this extraction, in as much as only the condition is peremptory, that the vegetable juice to be preserved in a glass-vessel lightly covered in a cool cellar, may not be decomposed or ferment before the preparation of the essence may be completed. This time being over, the spirituous extraction is forced again from the vegetable remains by pressing it out, and the tincture obtained in this manner (showing by taste, smell, and colour that it has absorbed the greater part of the sub-

* To obtain the juice successfully depends especially on a careful and perfect preparation of the plants, by assiduous bruising them in a stone mortar, and by previously cutting them, if necessary; for the best press exerts only feeble pressure upon the parts not bruised.

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stances fit for extraction), is immediately mixed with the juice forced out first. The mixture cleared out through having stood quietly for several days, sometimes for weeks, is likewise strained through a filter and preserved. *

This form of remedies by preference and for distinguishing it from the tinctures obtained from dry substances we designate by the name of *Essence.*

THIRD CLASS.

(RULE 3.)

Many plants, also in their fresh state, contain but so little juice, that even by the most assiduous labour a sufficient quantity of it cannot be extracted. These, therefore, again require an other manner of preparation and form the *third class.* They are comminuted according to the given rule, poured over with strong spirit *double* the quantity of their weight and then further treated as we have stated above in reference to the tinctures of the first class.

To quite a like manner of operation are subjected such plants, which according to their outer appearance rather ought to be ranged among the second class; the juice of which (like *Symphytum* f. i.) is so mucilaginous, that this property hinders due separation by pressing.

Let all preparations of these three classes always be perfectly clear and without any sediment; the sediment forming two or three months after their preparation, must therefore be separated anew by repeated filtration.

This much about the preparation of the Tinctures and Essences. Concerning the selection of the substances to be used for them, the dry as well as the fresh ones, the following general rules may be recommended for consideration.

§. 12.

SELECTION OF VEGETABLE SUBSTANCES:

Though it is a matter of course, that always and everywhere only the very best substances are to be applied for our prepara-

* For very mucilaginous plants, whose juice runs off in pressing only with difficulty and scarcity, it is useful to add in bruising immediately a part of the spirit of wine conjecturally to be applied, whereby the juice is rendered more easily fluid. This quantity previously used up is to be deducted from the rest, in adding.

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tions; notwithstanding the externally most unexceptionable drugs allow a selection, being mixed from parts of different quality.* To make our opinion quite clear, we will for instance remember, how widely the interior quality of single pieces of Rhubarb differs from their external appearance; how much often an externally sound bark surrounds a mouldy and wormeaten interior, or how seeds sound in form and colour may yet be destitute of virtues and spoiled by lying, and so on, a variety of strange admixtures not to be mentioned.

About this, therefore, the testing capacities must watch, that nothing that is inefficacious, wrong or strange, may become mixed with the medicines to be prepared. If it be remembered how important it is that the remedies are to be administered to the sick only in drops and mostly in attenuations most perfectly pure and vigorous, and that they are fit for answering the directions of the physician *only under these conditions*, no pains must and will be shunned for the utmost care in testing, extended to the single little pieces, that there may be obtained a production, perfect in all perceptible properties, which then will distinguish itself strikingly also externally from any other prepared with less care. Considering the proportionately small quantities to be prepared, these pains do not by far cost so much time as it might appear to some.

§. 13.

SELECTION OF SIMPLES.

In selecting fresh plants the following points are to be regarded.

a) It is a general rule, that everywhere, where there are to be got plants grown wild (that is without the help of men spontaneously) they are to be preferred to the plants cultivated in gardens or anywhere else. If there is no question about the loss of volatile constituents the exsiccated vegetables if they are taken from their proper natural place of growth deserve yet the preference to plants grown in gardens or glass-houses. This principle will find its application to many foreign products.* But yet with the indigenous plants growing spontaneously

* If the place from whence to draw them is too far off, there is an excellent expedient in having sent the duly gathered plants comminuted on their place of growth and covered over with their weight or double their weight of strong spirit of wine (in proportion to the quantity of their juice) in a proper vessel. After

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b) a selection is to be made in regard of their place of growth, for this is always of essential influence respecting the development of their medicinal virtues; so, for instance, the appearance of a plant luxuriously grown up or very full of juice noways warrants for its being full of efficacy; as little plants liking a dry, sunny place are to be collected from a humid, shady one and *vice versa*. Such and the like considerations are never unknown to the experienced botanist.

c) Only sound, perfect specimens are to be applied; all that are crippled, half dried up or turned into wood through age, rotten or otherwise spoiled must be singled out.

d) They must also be kept clean, that is, free from mud, earth and other external substances. To wash them with water is allowed only in some cases, it is to be avoided in collecting roots, they on the contrary must be cleaned by cutting out what is foul, by beating and if necessary brushing. Care also must be taken to see not less

e) that no insects remain in the plants, whose bodies and larvæ could get into the Essence prepared from them.

f) The time of day for the collection is likewise no indifferent thing; plants must be gathered neither during heavy morning dews nor after heavy rains; as they get also injured by being transported for days during great heat or pressed densely together in a high degree.

g) That care must be taken to obviate mistakes of related species, is a matter of course; but it is also necessary especially in buying small quantities from paid gatherers to take the utmost care, that they are not left mixed with strange things, or other vegetable parts etc.; therefore a previous strict sorting is indispensable. *

fourteen days' standing and aided by the press, this infusum furnishes a very vigorous tincture, at all events preferable to that prepared from plants less vigorous on account of having been cultivated or taken from a wrong place. To be sure, the mediation of an agent fully to be trusted is indispensable for this purpose.

* A catalogue of our officinal plants, in so far as they are indigenous to Germany, in the order as they follow each other in the time of their most judicious gathering, will be welcome. Variations indeed (occasioned by diversity of places, influence of the change of weather and seasons), will be observed, making a difference from fourteen days to months; notwithstanding it will present a guide in general and preserve against neglects. A table has been annexed at the end of this work stating for every plant the month, in which its time of gathering *begins* in the rule, although it may last perhaps for months longer.

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After having treated now the preparation of the remedies according to their different forms in such a manner that the form of preparation answering best the purpose may be found with certainty for every remedy to be ranged in later times among the medicinal treasure, we now pass over to those substances, which serve here not alone as dissolvents but afterwards also as medium for attenuation (vehicle). There are three: Spirit of wine, water, and sugar of milk;to the greatest possible purity of which as much care is to be devoted than to the remedies themselves, because it cannot be without influence upon the efficaciousness and quality of the remedies.

§. 14.

SPIRIT OF WINE.

Spirit of wine, a vinous product of fermentation drawn from saccharine vegetables, contains always some more or less strange admixtures, that is to say, such admixtures, as impregnate it more or less, without being a condition for its chemical composition, which after the manner of its preparation in its production as well, as according to the quality of the substances used, produce an after-smell and taste not properly belonging to it, and must be carefully removed.

The purest spirit of wine from its origin in this respect is obtained except from wine itself, from the purest grains of wheat and rye. The *first* condition in selecting it for homœopathic use must therefore be, that one is strictly convinced that the product used may have no other origin;* for all spirit drawn from rice, plums, cherries, or another product of fermentation as well as the one prepared from potatoes is to be rejected for such use.

But that all spirit for that purpose must always be perfectly free from fuseloil is the *second* condition, and the most different products being presented in trade in this respect, it is necessary to subject all spirit to a careful purification. This of course will be effected the more perfectly and easily, the purer the spirit to

* To ascertain this, it has been proposed to prepare spirit of wine from dextrine syrup one has made one's self; against which there is no objection, unless this process being more costly and only an experiment to be performed with small quantities requiring a contrivance and rooms, being at command only for a few. We assert that *carefully* purified spirit made of corn is not inferior to the spirit made from dextrine.

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be acted upon was from the beginning. From this reason in most cases such whisky will deserve the preference, as is produced not in large establishments distilling it in great quantities, but such as is got with the former simpler apparatus and strengthened by repeated distillation, because in the socalled „steam distilleries“ the removal of the fuseloil is generally far more imperfect on account of the speed and abbreviation of the labour.

§. 15.

PURIFICATION OF SPIRIT OF WINE.

Such whisky as does not already contain at least 60 per cent of spirit, is first to be brought to this degree of strength by rectification over newly made redhot charcoal, and the last parts of the distillation are to be separated from the first, for they contain more fuseloil. After this it is brought in contact with a proper quantity (about $^1/_{16}{}^{th}$) of charcoal newly made redhot and immediately coarsely pulverized afterwards in large glass carboys, filled up to $^7/_8{}^{th}$. After some weeks, during which it is to be agitated once a day very vigorously, let it be separated from the powdered charcoal by speedy straining and the distillation begin in a well tinned still, well mixed through stirring with the twelfth part of common skimmed milk. Distillation may then begin under the known precautionary rules; but there are two conditions the fulfilment of which secures an excellent product.

The *first* is, to bring about a layer of powdered charcoal *over* the surface of the liquid in the still, so that the evolving steams must pass through it, through which at the same time it is avoided that the spirit passes over too quick. *

The *second* condition is the peculiar form of the head of the boiler, which, instead of being formed wide and low, must be narrower and higher, whereby exactly the contrary from the formerly wished speed of the labour is attained, in as much as a good part of the ascending vapours is repressed in this prolonged way and only the specific lightest can pass over.

* Such a contrivance is very easily furnished, if one has made a perforated disk of tinned iron plate, having the circumference of the inner side of the boiler, divided in the middle, and united by a hinge, to get it through the narrow neck of the boiler, and which rests upon four short supporters riveted in the boiler's side, upon which powdered charcoal may be strewed to the height of one and a half to two inches.

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If the distillation is managed under these conditions with the proper ease and uniformity and the product used only so long as the alcoholometer indicates at normal temperature not under 75 per cent,* a repeated rectification will only be required in such a case that the whisky taken for distillation contained from the beginning a larger quantity of fuseloil than commonly. There is to be decided by taste and more especially by the smell of the spirit evaporated on the warm hand. The so obtained spirit contains 75 to 80 per cent, and may be applied for all attenuations as well as for the preparation of tinctures; we shall always designate it with *strong spirit of wine* (alcohol).

§. 16.

DILUTED SPIRIT OF WINE.

Through a mixture of three parts by measure of this strong spirit and two parts of pure water we prepare the *watered* or *diluted* spirit of wine *(Alcohol dilutum)*, which is used for preparation of several tinctures as well as for the first attenuation of essences. *It is not allowed* to make use of the weak whisky following in the rectification of alcohol, as it proves never to be of so pure a taste and smell, that it could be estimated in quality to be equal to it; therefore it must be prepared by immediate mixture.

§. 17.

STRONG ALKOHOL. (ALCOHOL FORTIUS).

Now spirit of wine of 80 % being not yet strong enough for the solution of volatile oils, of phosphorus, sulphur and some other substances, we deem it best to adopt for our purposes another more simple and at the same time very certain method, that recommended by *Sömmering*. It proceeds as follows.

Ox- or calfs-bladders are cleaned from the mucus and fat that adhere to them by washing and scraping. After having fastened in their neck by tying with thin threads a glass tube one to two inches long and about six lines wide in such a manner, that it is thoroughly close to it, the bladder is extended, the glass tube

* Spirit of wine being now so generally applied for household purposes, this circumstance may compensate for a greater loss in as much as the rest got by farther continued distillation of the quantity of spirit acted upon, will find manifold use.

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stopped by a corkstopper and hung up for exsiccation in the air. This done, the bladder gets some coats of a solution of isinglass and is again dried. Each bladder so prepared, is filled to $^{7}/_{8}{}^{th}$ with pure alcohol of at least 75 per cont, the glass tube closed by means of a piece of wet bladder as it is commonly done with digesting vessels, and hung up on a thread slung around the tube over a stove at a dry temperature of 30 to 40 degrees. It is essential to have this degree of heat uniformly; therefore the places over a bakers' oven in a closed room, or in a well heated drying press in the laboratories are the best for it. After 8 to 10 days have elapsed, so much water has been exhaled from the spirit of wine into the air through the side of the bladder that it appears strengthened to 95 cr rather more per cent. Should it after this not have obtained the abovementioned strength, the process is to be continued till the aim is attained. Before it can be used, this spirit must be drawn over again in a glass retort over some fresh burnt charcoal, for it is turbid and sometimes also coloured, and comes from the bladder impregnated with a saccharine smell. We designate it with the name of strong alcohol or strengthened spirit of wine *(Alcohol fortius)*.

§. 18.

WATER.

Besides the spirit of wine also water serves as a solvent medium for many medicinal bodies. Let it be free from saltish, earthy and metallic parts, contained in all springwaters in different quantities. Snow and rainwater are purer in that respect, but they are likewise not absolutely applicable in as much as earth, dust, soot and the like soil it, and would at least require to be percolated through a close straining apparatus. Therefore water purified by drawing it over gently in a well tinned still, head and refrigeratory and preserved in an earthen vessel protected lightly against dust, is to be applied.

Careful purification of the distilling apparatus from all smells after medicinal substances, cannot be recommended enough, and therefore it is indispensable to observe the well known rule, to draw over the first pounds of the distillation a little hot and to throw it away so long as vinegar of lead makes it turbid, before the cooler water coming over is to be collected for use. The labour also must not be continued longer than to leave the third part of the water acted

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upon in the boiler. Lastly for convincing one's self of the true chemical purity of the water it is necessary to apply the proper reagents.

§. 19.

SUGAR OF MILK.

We come now to the statement of the *third medium of development* (or *vehicle*), *sugar of milk*. This is an essential constituent of milk obtained by inspissation and crystallisation of sweet wheys of cow's milk. Manufactured for wholesale it is more or less adulterated with dust, wood, soot, sometimes also it has a mouldy and yellowish appearance, musty smell and disgusting aftertaste.

Therefore for our use it must be purified carefully, and this may be done best in the following manner.

Any quantity of sugar of milk coarsely powdered is dissolved by boiling it with its double quantity of distilled water; after a little rest the solution is to be filtered hissing hot through white filtering-paper supported by a piece of new bleached linen into a sufficiently roomy earthen vessel, containing as much pure strong spirit, as water has been applied for the solution of the sugar of milk. No sooner the two liquids come in contact, than the separation begins in the form of small pointed crystals, which accumulate partly at the bottom of the vessel, partly concrete as a continuous coating at its sides. After finishing the filtering and before the vessel is set aside for cooling, the whole liquid is duly stirred with a clean wooden stick, for getting a perfect uniform mixture. This labour is to be done most profitably, at the lowest possible temperature in as much as through it the separation of the sugar of milk is very much promoted, so that the loss sustained is not considerable.

After several days' rest the liquid standing over the crystals is poured off gently *, the sugar of milk obtained is taken off from the sides and the bottom of the vessel, washed with cold distilled water, then spread out in thin layers upon clean paper over sieves, and lastly dried with very moderate heat.

To make it ready for use, for triturations as well as for dispensing, it is only to be reduced to the most subtle powder, for which operation an iron mortar may be used without

* Most of the spirit applied may be recovered from the liquid by distilling it cautiously and it will be as good as before the operation, but not so strong.

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hesitation, provided its being not only clean and free from odours, but also smooth, polished and free from rust, as we have mentioned on the 12th page. That an especially fine hairsieve not used for other purposes must be kept, is a matter of course.

Sugar of milk is to be preserved in a dry, airy place in well closed glass or wooden vessels.

§. 20.

GLOBULES.

As a means for administering the doses as small and uniform as possible, many physicians make use of socalled globules, made by confectioners of sugar and starch, which are to be had in very different sizes from that of poppy-seed to that of middlesized shot under the name of sugar in globules (Nonpareille). For medicinal use let only the whitest, driest and hardest be selected, and care taken that not globules of unequal size or sugar in form of dust may remain mixed with it.

§. 21.

PRESERVATION OF THE MEDICINAL STORE.

From the peculiar in many regards deviating manner in preparing the homœopathic medicines we see indeed the necessity of devoting to their preservation more than common care. In this regard the following rules have shown themselves useful by experience.

All *triturations* are to be preserved in medicine glasses of cylindrical form with narrow mouth, to be closed with a cork stopper, the volatile and odoriferous ones moreover tied over with a piece of soft dry bladder, and provided with labels, duly fixed (that is by gluing them on, never by tying them to the glasses), upon which besides the name of the remedy, also with readable figures the potency is written, and to arrange them alphabetically in a large, sufficiently deep drawer with cover in such a manner that the three (or if it be required, more) potencies of *one* remedy have their place in a common partition one after the other.*

The ***Essences*** and ***Tinctures*** must be placed in similar glasses containing two to three ounces closed with a tight stopper and

* It is more proper to separate everywhere the dry triturations from the liquid attenuations which bear the same name, than to preserve them together in *one* place.

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durable cover in a separate press. Where greater quantities are consumed, separate storevessels must be set up to be preserved in a separate place.

We have already directed the attention of our reader to the injurious influence of the sunlight; the stores therefore must be protected carefully from it as well as from the daylight in general; this is the same with the chemical preparations and triturations as also with the essences, tinctures and attenuations. Let therefore all presses be provided with closely fitting doors impervious to light. Some such preparations not bearing the light (f. i. Bismuth, several preparations of Mercury, Phosphorus and others) must besides be preserved in blackened glasses, and, in case that glasses of hyalith of the form wished for are not to be had, these are easily prepared by making a coat of copal varnish with ignited soot, and painting over with it the entire glass only neck and bottom excepted.* This varnish, after being well dried in a hot stove, is as durable for dry or for liquid contents, as easily to be renewed if necessary. Strong spirit of wine dissolves it of course.

As to the dilutions and liquid potencies, they also are to be kept separated from each single remedy in a case, large enough for receiving the necessary number of glasses. Glasses of cylindrical form, holding two drachms are best adapted for it, because they require the least room and take in easily a quantity of 200 drops. For keeping off dust and preventing exhalation it will be proper to close each chest with a cover; let each bear the name of the remedy preserved therein distinctly written upon it; all remedies arranged alphabetically must be set up in a press locked.** Such arrangement is highly preferable to putting them in a series in common larger drawers, because it prevents misplacements from one row to the other and thereby mistaking one remedy for the other; and besides better secures the glasses standing free from being broken, when the chests are drawn up and closed as well,

* Neck and bottom must be left free from the coating for being able to see through the glass and making sure about its being clean.

** May he who intends to establish and keep a homœopathic pharmacy, and to gain the confidence of the physicians as well as of the public, spare neither labour nor cost, for potentisation not alone of every remedy as far as is required from him, but always to keep the necessary number of glasses for it! love for convenience and the temptation arising from it for wilful deviations from the prescriptions of the physician can be prevented *only in that way*, when the glasses belonging to all demanded potencies are ready and to be filled up without farther trouble.

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as it facilitates the alphabetical arrangement of remedies later to be introduced.

Moreover it is yet an *indispensable* rule, to mark *all stoppers without exception*, they may be used for closing tinctures, triturations or dilutions, with the name of the remedy, and the two last also with the number of the potency to obviate all mistakes. This only can be attained, when each glass of the dilutions, is furnished, as §. 7 has been mentioned already, with a label pasted upon it, in order to distinguish the contents still with certainty, when the stopper has been lost. This rule besides facilitates a control of the glasses standing close together.

§. 22.

ARRANGEMENT OF THE DISPENSARY.

In the foregoing points most of the necessaries for a well fitted homœopathic dispensary are stated already; we need therefore only enumerate the necessary requisites as well as to point out some precautionary measures, for being able to dispense from it with a punctuality that creates confidence.

§. 23.

OF DISPENSING.

To the first belong some mortars for trituration, unglazed within, serving for mixing divided powders, which besides is always to be done according to the known rule that a small quantity of the remedy, if it is a trituration must not be mixed with the entire quantity of sugar of milk, but first is triturated with a part of it. For mixing liquids with sugar of milk select a mortar glazed within, as the moistened mass sticks less to it, and a slight mixing by trituration likewise being only required, whilst the mixing of dry triturations (especially intended for dividing simple doses) require always a longer continued trituration according to the rules of art.

Some spoons, fine scales, spatulæ and the necessary number of powder-scoops, ladles, all in so far as is possible of horn or porcelain, as also a pair of good taring-scales are necessary.

For moistening globules with medicine, watch glasses or small porcelain cups, such as used by painters, afford the best means; in these the required number of globules is poured over with so much

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of the medicinal liquid, as will be sufficient for moistening all the grains. After a minute, which time will do perfectly for securing the proper soaking, let that part of the liquid, which may be too much, run off, and if the globules are to be preserved *separately*, it is necessary to let them become dry, which will take place at common temperature in some hours if they are spread in a flat basin; whereupon the globules adhering together are separated by slight pressure and put into a glass very closely stopped. When globules are to be dispensed with sugar of milk the prescribed number of doses is distributed into the powder-scoops, the number of globules then added to each, which are put in the paper-capsules without crushing them.*

Let the capsulæ intended for the powders be always made of the finest white glazed paper absolutely free from odours, lest anything should stick to them or the medicine should take an odour not belonging to it.

To prevent any possible mistake in dispensing (so very likely to happen on account of the prevailing similarity of the attenuations in their outer appearance) let it be a strict rule, especially when different remedies stand written upon *the same* prescription, to make ready each separately and to mark the first with its label, before the second is begun. It is here the same with what has been recommended §. 7 for preparing dilutions in *that* case, where several medicines in liquid form are to be dispensed at one and the same time.

If triturations are prescribed separately or mixed with sugar of milk, it will be serviceable to dispense them also in glasses, remaining best preserved against humidity in this way.

Finally I should advise the dispensing assistant ought to pay attention to clean his hands as well as his dress most carefully, before beginning his homœopathic labours, lest the confidence of the sick in the certain efficacy of the homœopathic medicines should be disturbed, by foreign odours or other adulterations which, as is well known, are imparted so easily. *These regards* the pharmaceutist also owes everywhere to the public as well as to his own reputation.

* It is to be remembered that only tinctures or attenuations prepared from *strong* alcohol are fit for being imparted to globules, because *Essences*, and *watered spirit of wine* soften them forthwith.

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PART II.

DESCRIPTION OF THE MEDICINES AND THEIR PREPARATION.

ABSINTHIUM.

Herba seu Summitates Absinthii, Absinthium vulgare s. majus, s. rusticum. Common wormwood, Absinthium. From Artemisia Absinthium Linn. Sexual Syst. Syngenesia (Cl. XIX.) Polygamia superflua (Ord. 2). Natur. ord. Compositæ (Corymbiferæ). Hayne II. 11. Düsseld. 235.

This plant growing spontaneously in uncultivated sunny places, vineyards, and upon old walls all over Germany, is well known and easily distinguished by the white silky felt with which the leaves, especially the younger ones, are covered as well as by the specific bitter aromatic smell and penetrating taste of all its parts from its related species. In July and August the flowering panicles, together with the topmost leaves are collected and prepared with strong spirit of wine for tincture according to Rule 3.

Colour: Saturated greenish-brown; smell and flavour of the plant in a high degree. *

ACIDUM BENZOICUM.

Flores Benzoes, Sal acidum Benzoës. Acidum benzoilicum. Benzoic acid, Flowers of Benzoin.

From the best Benzoin, consisting of many white pieces, resembling almonds, any quantity is coarsely powdered and strewed uniformly upon the flat bottom of a round iron dish, having 8 to 9″ in diameter and the sides a height of 2 to 3″. Over the rim of this dish then a sheet of not too tight filtering paper is closely extended, turned down and fixed on the outer side with paste. A conical cap, made

* The appearance of the Tinctures is determined by the colour they present in a colourless glass-phial having 2 to 2½ inches in diameter.

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of paste-board, 10 to 12 inches high and as wide as the dish, lined on the inner side with glazed paper, is put over the dish and likewise fastened to it with paperstrips, paste and strings as tight as possible.

The dish, prepared in this manner is put upon an iron plate strewed with sand at most one inch high, lying over a moderate fire, to be kept burning for several hours and increased according to the greater or lesser quantity of the gum acted upon.

The labour being finished and the apparatus again grown cold, it is taken apart; and in the cylinder will be found the most beautiful, long flexible needles of sublimed benzoic acid, shining like silk, having a white colour, at the most with a feeble yellowish tinge and a peculiar sweetish odour and harsh taste; they are to be taken out and preserved in wellstopped vessels.

Triturations are prepared from it.

ACIDUM HYDROCYANICUM.

Acidum zooticum s. borussicum. Prussic acid, Hydrocyanic acid, Cyanide of Hydrogen, Cyanhydric acid.

In a glass-retort, whose neck is broken off short, large enough to contain about a medicinal pound of liquid is put a mixture consisting of $2^1/_2$ drachms of triturated crystallised ferro-cyanate of potash and 3 drachms of pure not fuming sulphuric acid, previously diluted with 5 drachms of pure water.

After having agitated the mixture in the retort, this is put in a small iron chapel upon half an inch of sand in such a manner, that the short neck is directed upwards; it is closed by means of a stopper through which passes a glass pipe about $^1/_4$ to $^3/_8$ of an inch thick, projecting some lines on the inner side over the stopper. This pipe, the entire length of which must be 12—15 inches, is bent downwards a little outside the stopper in an obtuse angle, to reach into the neck of a tubulated receiver of a proper size, in which it is likewise fastened with a perforated stopper, both connexions being duly luted airtight. The tubulus of the receiver turned downwards is in the same way connected by a glasspipe bent in a angle with a bottle containing the receiving liquid, 18 drachms of watered spirit of wine. The latter pipe of connexion is to be immersed some lines into this liquid, and must be only tightly luted at its exit from the tubulus, but not in the receiver.

Let the distillation now begin by a moderate fire carefully

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guided, and carried on so long, till the residue appears pulpy. If the liquid received should not weigh 22 drachms, it must be brought to that weight and be preserved, distributed in halfounce-glasses, very closely stopped, in a dark place, or, what is still better, in a covered box. Only as long as the preparation is absolutely colourless and has the peculiar pungent smell of Prussic acid, it is fit for use.

The potentisation is to be effected with strong spirit of wine according to the rule already given, but must often be made anew, because this preparation is very much liable to decomposition.

ACIDUM HYDROFLUORICUM.

Acidum fluoricum, *Fluoridium hydricum*. Sparry acid, Hydrofluoric acid.

Let 16 ounces of fluor spar, in very fine powder, be exactly mixed with 32 ounces of concentrated sulphuric acid, (prepared by burning of sulphur) in a leaden bottle that may have room for double the quantity of the mixture, and whose mouth must not be to narrow. After having put the bottle in a sandbath, let be added the cover to the bottle which is connected by soldering with a semicircular leadpipe ½'' wide and most securely luted, by a proper piece of rolled caoutchouc, crammed between the neck and cover of the bottle.

After having placed under it an open leadbox or deep dish containing 12 ounces of water, in which the end of the leaden pipe is immerged, a moderate fire is made and kept up as long as one may conclude from the gasbubbles ascending through the receiving water that sufficient acid is yet elicited.

As soon as this labour is finished the receiver will contain 16 ounces of an extremely acid, yellow-turbid liquid, which first is to be freed from the sulphur driven over with it, by quiet settling. Of the acid then quickly to be filtered two ounces are saturated with as much carbonate of potash, and by this fluorkalium, the separation of the fluorsilicium likewise driven over is effected, so long till nothing more is precipitated. After previous settling, the now fully clear and colourless hydrofluoric acid, having a specific gravity of 1,09, is filtered, hereby also a leaden bottle must be applied. The first attenuation is to be prepared with pure water,

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the next with diluted and the following with strong spirit of wine.*

ACIDUM MOLYBDÆNICUM.

Acidum molybdicum. Molybdic acid.

Let one part of molybdate of lead (yellow lead-ore) in a fine powder be so long digested with $1^1/_4$ parts of not fuming sulphuric acid in a sandbath, till a proof taken from it leaves a perfectly white residue; when water is poured over it. The blue-coloured, pulpy mass is afterwards diluted and edulcorated with much water, the ablution water filtered, nitric acid added and again evaporated, till the sulphuric acid begins to escape.

The white powder formed thereby is pure molybdic acid, only to be yet edulcorated with much water acidulated with some nitric acid at the end of the edulcoration. After exsiccation it appears in the form of a white, loose powder, shining and palpable not unlike scraped stearin acid, from which triturations are prepared.

ACIDUM MURIATICUM.

Spiritus Salis acidus, Acidum Salis, Acidum hydrochloricum. Hydrochloric or Chlorhydric acid, Muriatic acid, Spirit of Salt, Marine acid, Spirit of Seasalt, Watery Hydrochloric acid, Glauber's Spirit of Salt.

Common muriatic acid of commerce free from arsenic, not too weak, also freed from sulphuric or sulphurous acid by adding a solution of chloride of Barium, is poured into a retort of proper size, and the 12^{th} part of triturated muriate of soda added. The

* The property of this highly corroding and volatile acid, to dissolve the silica from all its combinations, renders the use of glass- and porcelain vessels in its eduction and preservation absolutely inadmissible. Among the metals except gold and platinum at all events only lead is apt for this, though also this is corroded and destroyed by the ascending fumes in not filled vessels. As a material, very adapted, not dear and easily to be brought into all forms, gutta percha has been approved, out of which by the aid of metal-moulds easily little phials with stoppers of the same mass may be formed. The openings round the stopper after being used must be always closed tightly by pouring melted wax over it, otherwise the contents of acid might evaporate through it.

A double or threefold coating of collodium on the inner side for rendering glass vessels adapted for some time in preparing the acid, will preserve them against immediate corrosion; then receivers and filtering funnels of glass may be used.

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receiver to be applied in the known manner, must be kept cool continuously, furnished with a tubulus in which a knee-shaped bent glasstube is put in, and must contain distilled water, the fourth part of the impure acid acted upon. After having duly secured all junctures with lutum and it being dry, the distillation may begin and be carried on, till one half of the liquid is driven over. The muriatic acid made in this manner is colourless, has a weak not pungent smell, is perfectly clear, and gives off no fumes. Specific gravity 1,12 to 1,13.

Like all following acids it must always be preserved in glasses with glass stoppers. The attenuations are prepared in the like manner as is prescribed above under the head Fluoric acid.

ACIDUM NITRICUM.

Aqua fortis, Spiritus Nitri acidus, Acidum azoticum s. septicum, Acidum Nitri. Nitric acid, Hydronitric acid, Hydrate or sesquihydrate of Nitric acid, Nitric acid solutive water of Geber, Glauber's Spirit of Nitre, Nitrate of water.

Twelve parts pure powdered Nitre (Saltpetre) are poured over with eight parts of concentrated not fuming sulphuric acid in a tubulated retort connected with an empty likewise tubulated receiver and also with a second bottle containing some distilled water; then the distillation is effected after the known rule and continued with gradually increased fire as long as any liquid comes over into the receiver.

The product obtained in this way is to be diluted to a specific gravity of 1, 2; it is to be tested whether it contains muriatic acid by Nitrate of silver, and by nitrate of Baryta on account of sulphuric acid. Lastly it must be purified perfectly by a second distillation after having separated the turbidness by letting it stand several days quiet.

It is preserved and diluted as is mentioned under *Acidum hydrofluoricum.*

ACIDUM OXALICUM.

Acidum acetosellæ s. Sacchari s. carbonosum s. hypocarbonicum. Oxalic acid, Acid of woodsorrel, Saccharine acid. Acid of sugar, Hypocarbonic acid.

Let any quantity of potatoestarch be poured over with the sevenfold to eightfold quantity of diluted nitric acid of a specific

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gravity of about 1, 2 in a sufficiently roomy retort, and be heated in a sandbath till decomposition begins. Nitrous gas and acid will be evolved, which must be conducted in a roomy receiver containing some water. After the finishing of the process of decomposition, when the liquid boils in the retort without further emitting gas, it is poured into a flat porcelain dish and the crystallisation promoted.

By recrystallisation the oxalic acid obtained in this manner is to be purified from the adherent Nitric acid; then it forms colourless, transparent, oblique rhombic columns, decomposing in the air; they are very soluble in water and spirit, and have a strong acid taste, but no smell.

There is to be prepared from them a solution in watered spirit.

ACIDUM PHOSPHORICUM.

Acidum Ossium, *Acidum Phosphori perfectum.* Phosphoric acid. Acid of bones.

A tubulated glass-retort being able to contain at least twelve times as much as the quantity of Nitric acid diluted with as much pure water to be acted upon, is put in the sandbath and a glass-receiver with a neck as long as possible stuck on it, without a lute. After having gently heated the acid, according to the quantity of acid taken, small pieces of phosphorus from 10 to 20 grains in weight are put in by degrees through the tubulus, carefully observing not to bring in a fresh piece of phosphorus before the foregoing one is nearly dissolved. This process is so long continued, till the last piece remains undissolved. The nitrous nitric acid come over in the receiver during this time, afterwards is poured back into the retort through the tubulus, and the whole heated to boiling, whereby a part of the remaining phosphorus is yet dissolved. After half an hour the liquid is poured out from the remaining phosphorus in the retort into an open porcelain dish, evaporated to the consistence of syrup, or till all nitrous acid is removed; hereupon it is again diluted with water to get its first volume and then a stream of sulphuretted hydrogen gas is thrown through it, in which case, if arsenic was contained in the phosphorus this will be separated as sulphuretted arsenic with a yellow colour. The liquid is now left standing quiet in a wide covered glass for several days gently warmed; and after this time the heat is increased to + 50° R., whereby the sulphuretted arsenic is

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perfectly separated and the sulphuretted hydrogen gas yet contained is removed.

The liquid purified by filtration is evaporated over a moderate fire to a specific gravity of 1,15 and preserved under the name of *Acidum phosphoricum purum.* It contains $^1/_5$ dry glacial acid.

This acid is preserved and diluted like the beforementioned; yet for the first attenuation watered spirit of wine is to be used, otherwise the latter promotes afterwards the forming of mould.*

ACIDUM SULPHURICUM.

Acidum s. Oleum Vitrioli, Acidum Sulphuris, Acidum sulphuricum purum. Oil of Vitriol, Vitriolic Acid, Sulphuric Acid.

We select the sulphuric acid obtained under the name of Saxon or Nordhausen sulphuric acid from vitriol of iron and purify it, after having mixed it with two per cent of hydrated oxide of iron by distilling it out of glass retorts in such a manner, that the anhydrous part of the acid, coming over in white smoke which adheres to the sides of the receiver in clusters forming asbestlike needles, is removed, and the distillation is then collected in a new receiver, leaving one tenth of the quantity acted upon in the retort. It must be absolutely without colour and smell, not emit fumes and should be of a specific gravity of 1,840.**

Preservation and attenuation as those of the nitric acid.

ACIDUM TARTARICUM.

Sal essentiale Tartari. Tartaric acid, Tartarous acid, Acid of wine, Vinous acid.

The colourless and inodorous, transparent, oblique rhombic or also prismatic and tabular crystals of the vinous acid, are dry, of a very sour, agreeable taste, and resist the action of air. This acid, if drawn from chemical establishments must be tested whe-

* If the third attenuation to be prepared with alcohol (see under *Acidum hydrofluoricum*) should become turbid, this is a proof of the presence of a little silicic acid, which is dissolved only too easily from the vessel. In such a case this third potency and the next are to be freed from it by filtering and settling, before further potentisation is allowed.

** A spiral piece of platinumwire put into the retort will prevent the dangerous rising of the boiling acid; as also by uniform heat, kept up more near the sides than the bottom of the retort, by adding assiduously ignited charcoal and by giving the neck of the retort a very low situation the labour is essentially promoted.

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ther it is free from sulphurous or sulphuric acid, from nitric acid, from lime, copper, iron and similar adulterations before it can be used for medicinal purposes.

The first solution (in the decimal proportion) must be prepared with watered spirit of wine, because a solution made with pure water would soon be liable to decomposition; the following attenuations are to be effected with strong spirit of wine.

ACONITUM.

Herba Aconiti Napelli, Herba Napelli cœrulei. Large blue Wolt's-bane, Monk'shood, Aconite, Helmetflower. From Aconitum napellus L. Sex. Syst. Polyandria Trigynia. Nat. ord. Ranunculaceæ (Cl. XIII. O. 3.). Hayne XII. 12. Brdt et Ratzeb. I. 42. Düsseld. 395.

The fullest description and illustration of the Aconites is given in: — *Illustratio specierum generis Aconiti, additis Delphiniis quibusdam. Auctore L. Reichenbach.* With 72 plates in Fol. Leipzig 1823—1827.

The genus Monk'shood is spread all over Europe, either growing spontaneously in the mountain districts or cultivated in gardens for decoration. Though all species possess more or less narcotic powers, it is notwithstanding by no means indifferent from which we draw our exceedingly important medicine. Experience has declared itself for the above stated species and *exclusively* for the plant *growing wild*, which is indigenous to the Swiss, Carinthian and Styrian Alps, besides to the Pyrenees, the Dauphiny, as also to the mountains of Silesia, Bavaria, and to the Hartz.

The stem, two to three feet high, is erect, roundish-angulate, only above a little covered with slender hairs (pilose); the leaves are long-petiolate, five-lobed, divided to the base, the lobes again deeply cleft, cuneiform, above shining dark green, below light green. Flowers standing at the end in loose racemes, on long expanding pedicels, dark violet, the hood wide, semiglobulous with short blunt spur. The three- or five-partite capsulæ stand spread from each other.

In the flowering time, June and July, the entire plant, except the root, is prepared fresh for Essence after Rule 2 mentioned p. 22. Compare besides especially what has been remarked p. 24. about the selection of plants and in the note.

Colour dark yellow-brown, smell strong narcotic, taste nauseous, not very bitter.

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ACONITUM LYCOCTONUM.

Herba Aconiti lutei s. Lycoctoni. Dog's bane, Yellow monk's hood, yellow Wolf's bane. From Aconitum Lycoctonum L. Cl., O. and Fam. like preceding. Brdt et Ratzeb. I. 38.

The yellow monk's hood is indigenous besides to the alpine countries, also to the middle mountains of Europe, especially to Northern Germany, growing in and near clear forests of leaved wood on mountain meadows; it is also to be found in gardens.

It is distinguished through its leaves having hair on both sides, very long petioles, being much less incised and dull green, having only 3 to 5 lobes, from its relations. The whole plant is abundantly covered with hair, the strawyellow flowers have a cylindrical hood, and stand on the summit of the branches in pauciflorous diffuse racemes.

Preparation during the flowering time in July and August like *Aconitum Napellus.* *

ACTÆA.

Radix Christophorianæ s. Aconiti s. Hellebori nigri falsi. Common herb Christopher, Bane-berry, Cohosh, False black Hellebore. From Actæa spicata. — L. Sex. Syst. Polyandria Monogynia Nat. ord. Ranunculaceæ (Cl. XIII. O. 1.). Hayne, I. 14. Göbel, II. 31. Düsseld. Suppl. 112 A and B.

This elegant plant will be found over all Germany, though not frequently; it likes a stony ground in mountain forests and shady humid woods.

On naked, smooth, stiff, above ramose geniculated stems stand the petiolate, ternate-manifold compounded leaves, with ovate-cordate, serrato-dentated incised leaflets. The white flowers with caducous petals, appear in loose racemes, on long peduncles, growing out of the axils. The fruit is a smooth berry, subovate, and shining black, when ripe. The perennial root forms a strong ramose-fibrous stock of dark brown, when dried black, colour; it

* In modern times medicinal use having also been made of this species of the numerous genus of Aconites, it was necessary to grant a place to it in the medicinal treasure. But it must be remembered expressly that as a rule under the simple designation "*Aconit.*" always and everywhere only the abovementioned species "*Napellus*" is understood by the physicians, wherefore "*Lycoctonum*" is to be dispensated only on express designation.

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is inodorous, the fine ramifying rootlets running out long, show in the crosscut a stellate quadri-partite medullary substance.

We apply the root fresh taken out in May before the flowering time for tincture after Rule 3, which possesses a darkbrown colour and a bitterish and somewhat harsh taste.

ÆTHUSA.

Herba Cicutæ minoris s. Cicutariæ s. Cynapii. Fool's parsley, little hemlock. From Æthusa Cynapium — L. Sex. Syst. Pentandria, Digynia (Cl. V. O. 2.) Nat. ord. Umbelliferæ. Hayne I. 35. Brdt et Ratzeb. I. 27.

This plant growing frequently in our kitchengardens, especially among parsley, also in uncultivated places, and resembling parsley, commonly one foot high, has a spindle-shaped root, erect and quite smooth, above sometimes violet striped hollow stem, dark green, on the lower base lighter coloured, very vivid shining, ternate-pinnate cleftleaves. The umbels are opposite-leaved, long-petiolate, without an involucre, with 10 to 20 very unequal rays; petals white, the exterior ones of the marginal flowers twice as big as those of the inner ones. The plant, inodorous in itself, develops, when triturated, a nauseous loathsome smell and similar taste, whereby it is the most easily distinguished from parsley.

At the flowering time, in June till August gathered, it is prepared for Essence after Rule 2, which has a light brownish-yellow colour and a corresponding rather strong smell and taste.

AGARICUS.

Agaric. Toadstool. From Agaricus muscuarius — L. Sex. Syst. Cryptogamia O. Fungi (Cl. XXIV.) Nat. ord. Fungi. Brdt. et Ratzeb. II. 2. Düsseld. 5.

This poisonous fungus, very spread in the German pine forests from August to September, first comes out inclosed in an oval pileus, which later appears burst as a crateriform wrapper at the base of the trunk in shape of a ring round this and of tubercles on the surface of the cap. The white stem is central, tuberculous on its base, 4 to 6″ long and 1 to 1½″ thick, above thinner. The cap is either high convex, or quite flat, not seldom concave like a dish, having a fine scarlet or deep orange-red colour, sometimes striated in gray, and set with many whitish tubercles. It has a very loathsome,

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nauseous smell and burning acrid taste. We select the younger specimens, which have convex cap, not yet hollow stem, clean them from the adherent earth by scraping; peel off the exterior cortical part from stem and cap, and bruise the whole into a pulp; to make from it after Rule 2 the essence, possessing smell and taste of the fungus and a reddish colour.

AGNUS CASTUS.

Chaste tree. From Vitex agnus castus — L. Sex. Syst. Didynamia. Ord. Angiospermia. (Cl. XIV. O. 2.) Nat. ord. Labiatæ.

The shrub growing wild in the south of Europe is sometimes raised in pleasuregardens, where it endures not too hard winters in open air. It is very branched, but flexible, everywhere (the most on the younger branches) covered with fine whitish grey felt, of aromatic smell made stronger by trituration. The petiolated leaves are 5 to 7 partite, deeply incised, the middle incisions being the longest, those on the side decreasing by little and little, above darkgreen, below greyish, for the touch like velvet. Flowers in loose racemes, like spiculæ, standing at the summit, in colour blue or purple, having a strong not disagreeable smell.

Where fresh ripe berries are not to be had (as is commonly the case with us in Germany, where the plants raised produce flowers, bu no fruit) we select in the flowering time, from July till September, the flowering branches with leaves for preparing from them after Rule 3 a tincture, which proves to be of a dark browngreen colour, having a strong smell and aromatic, camphorlike taste.

ALCOHOL SULPHURIS.

Sulphuretum carbonei, Sulphitum carbonicum, Carboneum sulphuratum, Carburetum sulphuris, Sulphur carbonatum. Alcohol of sulphur. Sulphuret of carbon.

The preparation bought from chemical establishments is an easyfluid, limpid, colourless, tolerably heavy liquid, of penetrating strong, peculiarly fetid smell, acrid, somewhat pungent taste and strong refractive power. Exposed to the open air in a cup, it must pass off easy and quickly in vapour, during which time the outer side of the vessel is overlaid with ice. Let it be preserved

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under water in a place protected from sunlight, and dissolved for medicinal use in the common proportion in strong alcohol.

ALLIUM.

Radices s. bulbi Allii. Garlick. From Allium sativum L. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1.) Nat. Ord. Liliaceæ. Hayne VI. 6. Düsseld. Suppl. 5.

This wellknown culinary plant is cultivated everywhere. Its roots consist of several ovate-oblong, pointed, somewhat curved little bulbs, not unlike claws, which each separately and all together are enclosed in one common dry membrane, and form in this manner an oval bulb.

From the single parts, taken out in May and June fresh from the ground, and freed from their membranes we prepare after Rule 2 an Essence of yellow colour, possessing the wellknown penetrating smell of garlick.

ALOË.

Gummi s. Succus Aloës, Aloë succotrina s. socotarina s. lucida. Aloe. From Aloë spicata L. and other related species. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1.), Nat. Ord. Liliaceæ.

The juice which flows spontaneously out of the leaves in consequence of incisions made or cutting off pieces, afterwards inspissated by the sun's heat from several species of the genus Aloe, consists of vividly shining sap-greenish-black thin pieces, when held against the light of a reddish-brown pellucid appearance, brittle conchoidal fracture, weak smell resembling that of myrrh, and most bitter taste which lasts long.

After Rule 1 with strong alcohol the tincture is to be prepared, containing in high degree the aloetic smell and taste, and possessing a darkred-brown colour.

ALUMEN.

Alumen crudum, Sulphas Aluminæ et Potassæ acidulus. Sulphas aluminico-kalinus cum Aqua. Alum, crystallised alum.

Alum of commerce is freed from the iron it contains by repeated solution, filtering and recrystallisation, till reagents test its purity.

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For medicinal use from this pure alum a solution in the proportion of 1: 19 is made after the Rule laid down p. 19, and then the further attenuations are prepared.

AMBRA.

Ambra ambrosiaca s. cinerea s. griseu s. nigra s. vera, Ambarum cineritium, Succinum griseum. Ambergris.

Ambergris is an animal substance, to be found in the body of the cachelot (Spermacetiwhale) *Physeter macrocephalus* and other whales, but also floating on the waves of the Tropic seas, as well as thrown out upon their shores. The best is the socalled grey one, of dark greyish-brown to yellowish-grey colour, mingled with lighter layers, veins or also specks; it is somewhat tough (especially when fresh), shows itself to the feeling fatlike, and becomes soft like wax through kneading with the hand. Its smell is peculiar, but noways agreeable, something like mould, becomes stronger by a little warming, and its taste is the same.

Though tolerably dissolvable in sulphuric ether, trituration is to be preferred, because it preserves continuously all constituents; these separating partly in the continuance of time from the tincture. For extraction of the latter 1 part of ambergris is to be poured over with 12 parts of ether and macerated for eight days, according to the common rules. Afterwards it must be filtered.

AMMONIACUM.

Gummi Ammoniaci, Gummi-resina Ammoniaci. Ammoniacum, Romanic Gum. From Dorema Armeniaca Dec. Sex. Syst. Pentandria Digynia (Cl. V. O. 2.), Nat. ord. Umbelliferæ.

The milky juice flown out spontaneously after the stings of insects and indurated, appears in two different sorts in commerce. Though the tears occurring under the name of *Ammoniacum in granis s. in lacrymis*, which are from the size of peas to that of walnuts, roundish, smooth, yellowish-white, shining like wax not pellucid, nearly white on the fracture and conchoidal, shining and feebly opalescent, at common temperature hard, softening in the warm hand like wax, of a smell somewhat similar to that of garlick and an acrid bitterish-nauseous taste, are valued for being the best, at least purest sort, yet the second sort, known under the name of *Ammoniacum in placentis s. in massis* surpasses it very

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much in strength of smell, has besides all internal properties in common with the other, and may therefore, if it is only dry and not too much mixed with mechanical adulterations, be used for tincture with strong spirit, which possesses the peculiar smell and taste of the Ammoniacum, and is of a straw-yellow colour.

AMMONIUM CARBONICUM.

Alcali volatile siccum, *Sal ammoniacum volatile*, *Ammonium aëratum*, *Carbonas Ammoniæ solidus*. Carbonate of ammonia. Carbamide of Dumas, sesquicarbonate of ammonia.

This salt when bought from the chemical establishments being mostly very moist, and also not seldom mechanically adulterated by lead, we must resublime it or prepare it ourselves for medicinal use.

Let one part well exsiccated and powdered sal ammoniac (Hydrochlorate of ammonia), mixed well with one part and a half of chalk likewise quite dry, be put in a high medicine glass, which must be filled with it only to the fourth part. After having closed its mouth with a proper chalk stopper, the glass is put in an adapted vessel into the sandbath, but which must not reach above the contents of the glass. The ammonium is sublimed by means of a gradually raised heat, and overlays the upper part of the glass with a thin rind, of a crystalline appearance, which, after having separated the underpart of the glass, containing the residue which remains by cutting it, is to be scraped out with a wooden spatula. It must be perfectly white, of a penetrating smell, hurting the eyes. Let it be preserved in vessels very carefully closed against light and humidity; and prepare from it a watery solution in the proportion of 1: 9, and the further attenuations after the Rule given.

AMMONIUM CAUSTICUM.

Alkali volatile, *Alkali Fluor le Sage*, *Sal Alkali volatile*, *Spiritus Salis Ammoniaci caustici*, *Liquor Ammonii s. Ammoniaci caustici*, *Ammonia pura*, *Ammonium purum s. liquidum*, *Aqua Ammoniæ puræ*. Solution of Ammonia, Caustic volatile alkali, Spirit of sal ammoniac with quicklime. Caustic ammoniac.

Take one part of good quicklime and slack it with $^1/_3$ part of its weight of pure water, so that it may fall into a very fine

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powder, to be separated by a strainer from the stones, that remained entire. To this hydrate of lime is added in an iron or earthen still as much powdered sal ammoniac (muriate or hydrochlorate of ammonia) as it was unslacked lime, and then both powders are mixed as perfectly as possible, adding by little and little so much water as to conglobate the whole mass in wet lumps. With the evolving-vessel, which must be placed in a proper oven, now a not too small receiver, containing one part and a half of distilled water, is brought in conjunction by means of a gas-delivering-pipe, which must be immersed deep into the water, and all junctures must be closed by a tight and fast lute. By this it is serviceable to let the gas pass before its entry into the water also through a little intermediate vessel filled with some hydrate of lime, for absorbing the carbonate or muriate of ammonia that may happen to come over along with it. By means of a Woulfian bottle, which at the same time is fit for reception of a safety-tube preventing too great tension in the apparatus, this is the best effected.

By careful management of the fire the labour will proceed quickly and is finished when no gas bubbles appear more. The product distilled is brought to the triple of the weight of the sal ammoniac acted upon and will be of a specific gravity of 0,970. It must be colourless, clear, free from empyreumatic smell and lime, and be preserved in vessels very well closed.

The first attenuation is made with water in the decimal proportion, the following with spirit of wine.

AMMONIUM MURIATICUM.

Sal ammoniacum s. ammoniacus s. armoniacus, Alcali volatile salitum, Murias Ammoniæ, Hydrochloras Ammoniæ, Chloretum Ammonii. Sal ammoniac, Hydrochlorate or Muriate of Ammonia.

Sublimed (socalled Egyptian) Sal Ammoniac of commerce is purified by repeated crystallization, whereby by stirring and speedy cooling of the hot filtered liquid the formation of larger crystals is prevented. The crystalline powder obtained is washed with some spirit of wine, afterwards separated by filtering and speedily dried. Let it be perfectly white, inodorous, and resisting the action of the air. The first solution is made at $^1/_{10}$ in water, the further attenuations after the given rule.

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AMMONIUM PHOSPHORICUM.

Ammoniacum phosphoricum, Phosphas Ammoniæ. Phosphate of Ammonia. Neutral phosphoric Ammonia.

This salt is obtained by saturation of pure phosphoric acid with caustic ammoniac, in such a manner that the latter is a little in excess. The liquid conceives heat thereby, and the salt shoots into crystals after slow cooling in oblique rhombic columns. The solution cannot be evaporated by heat without a loss of ammonia, wherefore this must be resupplied. The salt re-acts alkalic and is decomposed in the air, becoming acidulated through loss of ammonia. In consequence of this, it is to be preserved in well closed vessels. The solution of it is to be made with water.

ANACARDIUM.

Semen Anacardii orientalis. Cashew nut, Anacardium, Malacca bean. From Semecarpus Anacardium L. Sex. Syst. Pentandria Trigynia (Cl. V. O. 3). Nat. ord. Anacardiaceæ (Terebinthaceæ). Hayne I. 1.

These beans of the shape of a heart, flattened, 3‴ thick, ¾—1″ long, on the broad end yet bearing the fruitstalk, contain between the outer hard, tolerably firm, shining greyish-black and the inner, thin, red shell including an almond-like kernel, lodged between an oily, dark and very acrid juice, which at all events contains the effective principle,* and of which in pounding care is to be taken.

We prepare after Rule 1 a tincture, which is inodorous, of acrid, burning taste and saturated brown colour.

ANAGALLIS.

Herba Anagallidis s. Anagallidis maris s. flore phœniceo. Common male and female Pimpernel, Shepherd's (or poor man's) weatherglass, red pimpernel, wincopipe. From Anagallis arvensis — L. Sex Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Primulaceæ. Hayne II. 45. Düsseld. 153.

* **Great precaution is to be advised in doing this labour, for this juice coming in contact with an irritable skin causes eruptions like pustules, which are very painful and their cure is difficult.**

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This plant is found wild in fallow grounds, fields, gardens, and in uncultivated sunny places over all Europe.

The slender, mostly decumbent stems are smooth, branched, four-edged; the branches opposite diffused, the leaves clasping, opposite, ovate-lanceolate, entire-obtuse, underneath with blackish translucent spots. The small, but beautiful flowers, red like red lead, stand in pairs on long pedicels in the axils.

Before the development of the flowers, in June, we gather the herb for preparing from it the essence after Rule 2.

ANGELICA.

Radices Angelicæ sativæ. Garden angelica. From Angelica Archangelica — L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Göbel II. 26. Hayne VII. 8. Düsseld. 279—280.

The garden angelica is a perennial plant, indigenous to central Europe, cultivated in several places, almost the only plant whose medicinal powers are improved by culture. The root mostly bought as a drug in dry state, is 1 to $1^1/_2$' long, the spindle-shaped root-head is set roundabout with many long, bent fibrous branches, increasing in thickness underneath. Its colour varies from light to dark earthy colour; it has upon its entire surface strong, deep longitudinal furrows, is spongy, and shows on being cut at length small yellow, resinous shining rills, the substance of the rind, 1 to 3''' thick, brownish and darkening towards the interior. Its smell is not disagreeable, strongly aromatic, the taste at the first sweetish-mucous, then sharp aromatic, and lasts long.

It is used for preparing a tincture after Rule 1, of the described smell and taste and having a pale-yellow colour.

ANGUSTURA.

Cortex Angusturæ genuinus s. verus, Cortex Angustinus s. Angostorœ. China amaro-aromatica. Angustura or Cusparia bark. From Galipea cusparia et officinalis. Sex. Syst. Diandria Monogynia (Cl. II. O. 1.), Nat. ord. Rutaceæ; formerly it was believed to come from Bonplandia trifoliata Willdenow. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1.) Nat. ord. Ochneæ. Göbel, I. 2. Fig. 1—4.*

* In fig. 4. of this otherwise so excellent work the bark is evidently represented

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The Angustura bark occurs partly in flat pieces, little crooked, 2 to 5″ long and ½ to 2½″ broad, partly in quills (like China-bark) of the same length or longer and to 1″ diameter by 1– 3‴ thickness. Sometimes it is covered with a loose, dirty-yellow rind (outer bark) and different lichens, after having scraped off which, the yellow-reddish, smooth substance of the bark sometimes having cross cracks, comes out. In other pieces the rind is thinner, but sticks faster, is of a greyish-yellow colour and somewhat uneven from wrinkles; yet other pieces have a reddish-brown rind sticking fast and interlined with little longitudinal and but seldom with cross furrows. The interior of the bark is smooth, of fallow or reddish colour; on the sharp cross cut it shines very much, the break is light, smooth, little resinous shining. It has a disagreeable, aromatic smell and sharp aromatic bitter and burning, salivating taste.

It is important to be exactly convinced of the genuine and unadulterated condition of this drug, as it occurs mixed, at least in former times, according to the statements of the authors, with the *Cortex Angusturae spurius s. falsus*, which is externally but litte similar to it, and far more different in its effects. The main distinctive characteristics of both drugs are the following: — *a)* The tubercles on the outer side of the false bark, being yellow like rust, similar to lichens, and uniting themselves not seldom to a continuous cover; *b)* the colour of the inner side being as a rule dark blackish-grey; *c)* the rupture-flats, which are not shining, but rather mealy, offering partly two layers, and also *d)* the taste, which is disgustingly bitter in the highest degree, lasts a long time and is neither astringent, nor aromatic, nor pungent.

The tincture, being of saturated yellowish-brown colour and of weak aromatic bitter taste, is prepared after Rule 1.

ANISUM STELLATUM.

Semen Anisi stellati s. indici s. canadensis s. chinensis, Semen Badian. Indian anise, stellated anise, Badiane. From Illicium anisatum L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 6.) Nat. ord. Magnoliaceæ. Hayne XII. 2[illegible]. Düsseld. 371.

The seedcapsules of this plant indigenous and cultivated in

too thick, in as much as the flat pieces are always thinner than the quills, and do not surpass as a rule the thickness of 2‴.

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China, Japan and the Philippine Isles, are brought us as a drug. They are star-shaped involucres, standing 7 to 9 round an axis, of rustbrown colour, having rough surface with wrinkles, internally smooth, including a nucleus, very shining, brown and oily, visible in the capsula, which is commonly open on one side. Smell and taste are agreeable and strong anise-like sweet.

After Rule 1 a tincture is prepared from it, which has the smell and taste of the seed, and a light yellow colour.

ANTHRAKOKALI.

Lithanthrakokali simplex. Anthrakokali.

Seven parts of dry pure caustic potash, are so long brought to and kept fluid in a polished iron vessel, till no more scum is thrown up; hereafter five parts of pit-coal reduced to the most subtle powder are added, the vessel is taken away from the fire and the mixture triturated till a perfect uniform black powder is obtained, which is to be distributed in small warmed glasses and preserved well closed against the access of air.

Quite in the like manner the sulphuretted pit-coal-kali *Lithanthrakokali sulphuratum* is to be prepared by previously adding a tenth part of pure sulphur to the pit-coal.

It is not the same thing, which sort of pit-coal is selected; the inventer of this preparation ordered a pit-coal to be applied, as black as possible. Later observers pretend, that only coal obtained from Fünfkirchen in Hungaria furnishes an efficacious preparation.

Rightly prepared the Anthrakokali is a black, very subtle, staining powder of alkaline sharp taste, inodorous and becoming moist in the air without deliquescing. Five to ten grains of the preparation must be dissolved in an ounce of distilled water with a darkish-brown colour, which must continue after standing and settling of the insipid pit-coal-powder, so that the liquid is only translucent in thin layers. In this property the goodness of the preparation is known.

We prepare triturations from it, but which must be made always in dry air and in a warmed mortar, also kept for use well closed.

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ANTIMONIUM.

Antimonium crudum, Antimonium sulphuratum, Stibium sulphuratum nigrum, Sulphuretum stibii, Sesquisulphuretum stibii. Antimony, Sulphuret of Antimony. Sesqui-sulphuret of Antimony.

To be certain regarding the frequently occurring adulterations of the native Sulphuret of Antimony with lead, copper, iron, and arsenic, it is necessary to prepare it one's self.

For this purpose 13 parts of pure metallic Antimony, which must be reduced to the most subtle powder, are mixed most exactly with 5 parts of washed flowers of sulphur, by degrees put into a redhot crucible, and after adding a half part of dried salt, rendered fluid and kept melting for half an hour. The mass after having been slowly cooled is taken out of the crucible; any parts nearest to the bottom, being pure (yet nonsulphuretted) metal, are to be separated from the rest by a stroke with a hammer, and the latter is to be reduced to powder, but finally to be levigated on a marble slab with water, till it is converted into an impalpable powder, to be used for triturations.

APIS.

Apis mellifica L. Ord. Hymenoptera. Fam. Mellifera. The Honeybee.

This sufficiently known insect, living in swarms in the wilds, as well as cultivated in proper etablishments, to furnish two valuable products of its industry, honey and wax; besides not without reason feared on account of its sting, is likewise applied in the homœopathic medicine. For this purpuse the entire insect has been cut alive into pieces and poured over with spirit of wine.

If, as we may suppose, the effective part of the insect, is to be sought for in the little poison-bag behind the sting, which empties itself along with the sting, the hindpart of the body ought to be used by preference, but only to be extracted with *watered* spirit of wine; for the poison of the bee is insoluble in strong spirit, because it coagulates with it. *

* The bees, as is well known, being at the time of swarming the most irritable (most angry), in this respect the choice of such a period might be deemed especially proper for their being gathered and prepared.

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ARANEA.

Aranea Diadema L. Cl. VI. 2. Fam. Crustacea. Cross-spider, Gardenspider.

This known species of spiders, existing everywhere, which is discernible by the clearly marked cross on the back of the hindbody, formed of several oblong yellow-white points of different size, is mostly to be found in the month of August in the corners of windows, doors, rooms, on trellises for vines and in garrets, where it spreads its large, regular and strong web.

We gather the living, and as much as possible fullgrown animals, separate the hindbodies with a pair of scissars from the shells and feet, cut the first once through, after having put aside the last, and pour over them ten times as much watered spirit of wine. The tincture extracted at common temperature within eight days, is of pale straw-yellow colour and treated like every other tincture.

ARGENTUM.

Luna of the *Alchymists*. *Argentum metallicum s. purum.* Silver, Leaf-silver, Silver-dust, Dust-silver.

Pure crystallised nitrate of silver is dissolved in twenty times as much of distilled water, the solution afterwards decomposed by stilling in a solution of vitriol of iron prepared with its tenfold quantity of water in rapid consecution. As soon as upon new additions of it no precipitate ensues, the labour is finished.

After due deposition of the whitish-silver-bright precipitate of pure silver, the liquid standing over it * is poured off; the sediment is to be edulcorated several times; then by digestion with some diluted sulphuric acid under repeated stirring the last trace of iron is removed, and lastly the washing renewed and so long continued, till neither iron, nor sulphuric acid is to be detected in the water taken for ablution.

Gathered in a filter, dried and triturated an extremely subtle silver-white powder of weak metallic brightness is formed, which

* The part of the silver yet retained in it, may be obtained entirely by precipitation by means of muriatic acid.

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under the most moderate pressure forthwith assumes the finest brightness of silver. There are triturations made from it.

ARGENTUM NITRICUM.

Nitrum argenti, Nitras argenticus. Argenti nitras. Nitrate of silver, crystallised nitrate of silver.

This salt is obtained chemically pure by dissolving pure silver flattened into plates or rolled, and cut in small strips in pure, moderably strong nitric acid, which solution must be promoted by applying heat. The saturated solution is diluted with equal parts of distilled water, filtered, and slowly evaporated to the point of crystallisation. In the cold there shoot out of it crystals, as clear as water, being rhombic and hexagonal tablets, to be washed with little spirit of wine, dried between blotting paper and preserved in blackened glasses.

Triturations of this easily decomposable salt are absolutely improper for medicinal use, wherefore we prepare a solution in water, like with the other salts, and namely the first in the proportion of 5: 95 and attenuate it further according to the given rules, protecting it likewise carefully against the influence of the light.

ARGILLA.

Terra alumina s. aluminosa, Alumina, Argilla pura, Oxydum alumínicum. Alumina, Alum earth, Argillaceous earth.

Alum free from iron is dissolved in boiling, pure water and decomposed by pure carbonate of potash, adding a little of the potash in excess. The whole is then digested gently for some time, to decompose a basic salt of alumina and sulphuric acid, which has been precipitated along with the alumina. The precipitate now well washed and separated by filtering, is dissolved, when still moist in muriatic acid, the solution filtered and then alumina precipitated anew by adding diluted caustic ammonium in excess. The obtained, very loose precipitate, requires long continued washing for freeing it perfectly from retaining sal ammoniac. After drying, it presents a loose powder, which is inodorous and tasteless, yellowish-white, and of which triturations are to be made.

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ARISTOLOCHIA.

Radices Aristolochiæ Clematitis s. vulgaris s. longæ s. creticæ. Long birth-wort, Aristolochy. From Aristolochia Clematitis L. Sex. Syst. Gynandria Hexandria (Cl. XX. O. 4.) Nat. ord. Aristolochiaceæ. Hayne IX. 24. Düsseld. 147. Göbel, II. 8.

The common Aristolochia is a perennial, occurring near hedges, ditches and vineyards, indigenous to Southern Europe. Its root is very long and creeps far about, round like a stalk, as thick as a quill and more, articulated tuberous-branched, of blackish-yellow-brown colour and rough, tuberculated and furrowed surface. The stems are erect, from two to four feet high, simple, smooth, striped, set with alternately long-petiolate, cordate, entire, above vivid green, below grey-green, leathcrlike leaves. The short-petiolate yellow flowers stand four to eight in the axils.

The root taken out fresh in the months of April or September serves us for preparing a tincture after Rule 3.

ARMORACIA.

Radices Raphani rusticani s. sylvestris. Horse-radish, Crow-flower. From Cochlearia Armoracia L. Sex. Syst. Tetradynamia Siliculosa (Cl. XV. Ord. 1.) Nat. ord. Cruciferae. Hayne V. 29. Düsseld. 400.

This plant growing spontaneously in moist meadows, about river-sides and near bogs in the middle and south of Europe, is cultivated copiously in kitchengardens. The root penetrating vertically deep into the ground, is nearly cylindrical, 4 inches thick and 12 to 16 inches long; externally it looks yellow-grey, internally white, and develops when triturated or pounded a volatile, most penetrating acrid smell, which causes copious tears, and has a burning taste.

Fresh taken out in autumn it is immediately after being cleaned comminuted with a grater, and prepared for essence after Rule 2, but which cannot be preserved for too long a time, therefore most be renewed, as soon as it does not more possess the volatile irritant properties of the root.* Its colour is brownish-yellow.

* In a dry cellar the roots can be preserved under moist sand throughout the whole year, without losing their efficaciousness.

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ARNICA.

Radices, herba et flores Arnicæ s. Doronici germanici, Panacea lapsorum. Leopard's bane, Mountain tobacco, mountain arnica, mountain betony. From Arnica montana, L. Sex. Syst. Syngenesia, Polygamia superflua (Cl. XIX. O. 2.). Nat. ord. Asteraceæ (Corymbiferæ). Hayne VI. 47. Düsseld. 239. Göbel II. 25.

This perennial plant is principally indigenous to northern Europe, where it grows not only straggling on the elevated forest-sides, but also covers in some parts whole meadow-plains, seemingly as if it were cultivated; in the Alps it ascends to the boundary of ever-lasting snow, where it becomes smaller and pauciflorous. The root consists of a rootstock, which is as thick as a quill, running slanting, endbitten, below set with numerous very long and fleshy fibrils, of externally reddish-brown, internally yellow-white colour, and very strong, peculiar, but not loathsome taste, increasing after exsiccation. The stem, one to two feet high, simple and round, proceeds from a crown of leaves standing tight, being simple, entire, ovate-lanceate, without petiole, is itself little branched and has few leaves. The flowers appear single at the end of the stem and the branches, on long, round peduncles, the calyx consists of two rows of scales, which sit on tight, are linear-lanceolate, villose, brown at the apex, and includes the beautiful gold-yellow, convex disc, which is broad to 2 inches, composed of many infundibiliform androgyne florets, surrounded by a row of flatspread, or dehiscent marginal florets, whose ligule is long to one line and broad 1 to 1½ lines, at the apex cut short and tridentated. The whole plant is besides set with scattered short, rough hairs, which imparts to it a dull gray-green appearance.

At the period of full blooming (May to July) we gather besides the root, which is the most important part, also the root leaves and the fullblown flowers, which are to be taken out of the calyx, for removing the larvæ of the *Musca Arnicæ*, which often sit upon the receptacle, and prepare from two parts of the root, one part of the herb, and one part of the flowers the tincture after Rule 3, which has the penetrant smell of the root and a saturated brown-yellow colour.

It has been wished for to transfer the excellent healing power of the Arnica to the socalled court-plaster (English plaster in Germany). Here is a prescription.

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EMPLASTRUM ARNICÆ.

One ounce of the best isinglass is soaked, finely cut and dissolved by boiling with a sufficient quantity of water. After straining, and a slow evaporation to four ounces, the solution is mixed with a yet warm *Infusum radic. Arnicæ (e Dr. vj. ad colatur. Unciar.* vj. parat.), and now applied by degrees after the well known prescriptions to a piece of taffeta, $1^1/_2$ ells (at 24 inches Germ.) 18″ broad, till the fourth part of the whole remains; to this is added an ounce of the tincture of Arnica at hand and spread over the taffeta, till all is used up. The plaster spread over flesh coloured taffeta is of a darker colour, as the common court-plaster, and smells moistened very distinctly after Arnica.

ARSENICUM.

Arsenicum album s. oxydatum album, Acidum arsenicosum, Acidum arsenicosum vitreum. Arsenic, white arsenic, Arsenious acid, white oxide of arsenic.

The metaloxide known under the name of white arsenic, is a mass, shapeless, lucid, like glass or porcelain, pretty brittle, which, fresh melted, is nearly as transparent as glass, becomes in time and especially in the open air impellucid. It shows a conchoidal fracture, is in the cold inodorous; heated, especially upon ignited coals it evolves a strong smell, similar to garlick and spreads suffocating vapours, being wholly volatilized; of a taste little sweetish, little dissolvable in water.

For medicinal use the white arsenic of commerce called Giftmehl is never to be used, being exposed to wilful and accidental adulterations. We select therefore from the compact (molten) arsenic, those pieces, which have lost their transparency mostly, because they are more dissolvable than the glasslike, triturate them, moistened with some spirit of wine in a porcelain mortar to a most subtle powder and prepare triturations in the known proportion.

Permanent solution of it with water can only be made in the proportion of 1: 99, because greater quantities are only dissolved by boiling and secede after refrigeration. This watery solution of $^1/_{100}$, though it is the first degree, must be regarded for two and so termed, for not erring in respect to its contents, inasmuch as each first potency is assumed as containing $^1/_{10}$. Compare with

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this, what has been said page 19 in the first part about the watery solutions. For preventing the formation of mould, it is necessary to add $^1/_6$ strong spirit of wine, in such a way that for instance 6 ounces of the watery solution are evaporated to 5 ounces and the evaporated ounce of water is made up with as much strong spirit of wine.*

ARTEMISIA.

Radices Artemisiæ s. Parthenii, radices Artemisiæ vulgaris. Common artemisia, mugwort, St. John's wort. From Artemisia vulgaris L. Sex. Syst. Syngenesia Polygamia superflua (Cl. XIX. O. 2.) Nat. ord. Corymbiferæ. Düsseld. 214. Hayne II. 12. Göbel II. 22.

The perennial plant, growing wild in all parts of Europe, is rather well known; it differs from its next and most spread relation *Artemisia Absinthium* by the dark green and quite smooth surface of its leaves and the mostly quite smooth and very stiff stalks, which are frequently as if covered with dark violet brown or purple colour. Also it is not to be mistaken for *Artemisia campestris* mingled with which it often occurs; the latter having a particular more spare growth, attenuated branches decumbent till to the flowering time and quite narrow, linear setaceous leaves.

The root to be dug in dry weather during November, consists of a stock of the thickness of a finger and some inches long, which is set roundabout with strong branched fibres, of light-grey-brownish colour, and peculiar, loathsome acrid smell, which increases by cautious exsiccation. We prepare from it, after having not washed but only cleaned it by knocking, also dried and powdered, a tincture after Rule 1, which has a yellow-brown colour, little taste and the smell of the root.

ARUM.

Radices Ari vulgaris s. Aronis communis. Wake robin, calf's foot, haremint. From Arum maculatum L. Sex. Syst. Monoecia

* As with mercurial remedies, it is desirable for the physician to conceal his prescription from curious and officious persons. For this purpose for the designation of Arsenic in medical prescriptions the expression *Geffium* or *Tinctura Geffii* has been accepted and introduced, which we do not omit to mention for the consideration of the dispensing assistants.

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Polyandria (Cl. XXI. O. 7.). Nat. ord. Aroideæ. Brandt et Ratzeb. I. 7. Düsseld. 20. Göbel II. 4.

A perennial herbaceous plant in forests of leaved wood of the middle and southern Europe. The arrow-shaped, long-petiolate, abruptly pointed leaves are smooth and not seldom sprinkled with grey-black irregular spots; the scape is naked, shorter than the petiole, and bears a large white sheath, from which a round, club-shaped, reddish spadix juts out. The white root, as large as a hazelnut, is roundish, set with fibrils, fleshy and has an extremely acrid smell, irritating the eyes and nose especially when bruized, and a similar burning taste. It must be gathered in early spring or late in autumn after the fruit is ripe and be prepared immediately for tincture after Rule 3, which has a pale straw-yellow colour and acrid smell, as well as a squeamish choking taste.

ASA FŒTIDA.

Gummi s. Gummi-resina Asæ fœtidæ, Laser fœtidum, Stercus Diaboli. Asa fœtida, Devil's dung. From Ferula Asa fœtida L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ.

This vegetable product of the hot Asia is brought in commerce in diverse sorts like Ammoniacum, and it is the same here, what has been said respecting the good quality of Ammoniacum. Good Asa fœtida consists of a mixture of white-yellowish grains, a little transparent, slightly shining like wax, easly becoming sticky, tough, and soft between the hands, from the size of peas to that of hazelnuts and more (socalled almonds), which partly stick to each other among themselves, partly are included in a brownish mass, shining like fat, yet softer, shapeless and of the most penetrating smell. Its taste is strong like garlick, bitter, somewhat acrid, and lasts long. In the open air it takes soon first a beautiful rose-colour turning later into a violet hue. With strong spirit of wine we prepare from it a very efficacious tincture after Rule 1, having a saturated brown-red colour and its peculiar smell and taste.

ASARUM.

Radices Asari s. Azari s. Nardi rusticani. Asarabacca, Hazel-wort, wild spikenard, Cabaric. From Asarum Europæum L.

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Sex. Syst. Dodecandria Monogynia (Cl. XI. ord. 1.) Nat. O. Aristolochiaceæ. Hayne I. 44. Düsseld. 148. Göbel II. 33.

The hazel-wort grows all over Germany, also in all other parts of Europe in shady, elevated forests, under small bushes, especially under hazel-bushes (hence perhaps the name hazel-wort). The root is creeping, of the thickness of a straw, till to 6 inches long, geniculated bent hither and thither, in some places knotty, and set with thick fibres; the stalks, scarcely one inch high, villous, somewhat decumbent, end in two leaves, sitting on 3 to 4″ long petioles, being reniform, entire, above shining dark-green, below greyish-green, run through with netlike veins, and sometimes set with slender hair, from the partition of which the short-petiolate, externally villous, green-red, internally dark-purple flower arises.

The root dug out in March and April during the flowering time, has fresh a nauseous bitter smell, similar to pepper and valerian, and is used for preparing a tincture after Rule 3, which is of a dark-brown colour, strong smell, and somewhat acrimonious taste.

ASPARAGUS.

Radices Asparagi s. Asparagi altici. Asparagus. From Asparagus officinalis. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1.) Nat. ord. Asparagineæ. Hayne VIII. 29. Düsseld. Suppl. 8.

This universally well known plant, cultivated in our gardens for culinary use, occurs on the shores of the sea on saltish ground, on sandy banks of rivers and meadows nearly all over Europe. The root-shoots sprouting forth in spring, the like as are used for food, are to be prepared for essence after Rule 2, which has little smell or taste, and a pale straw-yellow colour.

ATRIPLEX.

Herba Atriplicis fœtidæ s. olidæ, Herba Chenopodii olidi, Herba Vulvariæ. Stinking orach or arach, stinking blite or goosefoot. From Chenopodium Vulvaria. Sex. Syst. Pentandria Digynia (Cl. V. O. 2.) Nat. ord. Chenopodeæ. Düsseld. 124.

This plant growing luxuriantly everywhere on ways, walls, heaps of rubbish, places for collecting manure, sprouts stems ½ to 1 foot long, erect or decumbent, with petiolate, rhombic-ovate,

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entire, gray-green leaves and flowers standing in the axils, and in glomerated naked racemes. The whole plant, and during the flowering time especially the lower surface, is as if dusted with flour, and spreads, when triturated, an exceedingly nauseous, squeamish smell, similar to that of decayed cheese.

During the flowering time, which begins in July, the whole plant is prepared according to Rule 2 for essence; and it has the peculiar smell and saltish taste.

AURIPIGMENTUM.

Aurum pigmentum, *Arsenicum citrinum*, *Sulphidum arsenicosum*. Yellow arsenic, Orpiment. Sesquisulphuret of arsenic.

Though this combination of arsenic occurs in nature in large quantities, yet it is necessary to produce it artificially for medicinal purposes, on account of constant uniformity of the preparation. It is obtained by conducting sulphuretted hydrogengas into a solution of white arsenic prepared with muriatic acid; a beautiful lemon-yellow precipitate, being sulphuret of arsenic, arises, which, well washed and dried, serves for triturations.

AURUM.

Sol of the Alchymists. *Aurum foliatum s. metallicum*. Gold, Leaf-gold, Gold-foil, foliated gold.

Ducat-gold is dissolved in the necessary quantity of nitro-muriatic acid, at last with the aid of heat increased to the boiling point, the liquid as neutral as possible is separated from the little chloride of silver by pouring it off, and then diluted with twentifold its quantity of distilled water. Hereafter the decomposition of the chloride of gold is to be effected in quite the same manner, as has been stated under the article "*Argentum*". The washing is likewise to be done in diluted sulphuric acid as has been said there. After the settling of the reddish-brown goldpowder, the liquid over it is poured off, the precipitate repeatedly washed in pure water, at last gathered upon a filter and dried. It presents a loose powder of peculiar dark cinnamonlike colour, which under pressure of the pestle assumes already the most beautiful metallic brightness.

The first trituration is of a reddish-gray appearance, which distinguishes itself from that prepared from leaf-gold, as also

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by its comportment under the magnifying glass, since also under the most powerful no metallic leaflets can be perceived.

AURUM MURIATICUM.

Murius Auri, Aurum sulitum s. chloratum s. hydrochloratum, Chloretum auricum. Goldsalt, muriatic Gold, (Hydrochlorate of) chloride of Gold, perchloride or deutochloride of Gold.

In the like manner, as has been stated in the preceding article, a saturated solution of pure ducat-gold in Aqua regia (nitro-muriatic acid) is made as neutral as possible; after separation of the chloride of silver this solution is evaporated by the aid of a moderate fire to exsiccation, whereby however decomposition, which easily ensues, must be prevented. One part of the obtained yellow-brownish powder is to be dissolved in nine parts of water, and this solution is to be preserved under the designation of *Aurum muriaticum 1*, in a blackened glass, in a place quite dark and cool, for further attenuations. This salt is in dry, as also in liquid state of very volatile nature, and it corrodes the stopper; therefore it is to be preserved in glasses with glass-stoppers and carefully closed (for which purpose Caoutchouc would be the best).

AURUM MURIATICUM NATRONATUM.

Auro-Natrium chloratum, Aurochloras chloronatricus. Natronated Muriate of Soda and Gold, muriatic sodagold.

Equal weights of dry chloride of gold prepared after our prescription, and of pure chloride of sodium (muriate of soda) are dissolved in six times as much distilled water, and exsiccated to dryness in the steam-or sand-bath under continual stirring. This produces a vivid lemon-yellow, crystalline powder, which becomes easily moist and is duly to be protected from air and light.

From it also solutions are to be made in the common proportion, since triturations decompose very soon.

AURUM SULPHURATUM.

Sulphuretum Auri. Sulphuretted Gold, black suphuret of Gold.

Any quantity of chloride of gold dissolved in ten times as much water and acidulated with little muriatic acid, is to be heated to boiling, and there is thrown into the boiling solution sulphuretted

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hydrogen-gas till the decomposition is at an end. The sulphuretted gold secedes as a dark coffee-brown precipitate, which yields after washing and drying between blotting-paper and with most gentle heat a dark brown powder with some metallic glittering, and is to be preserved as carefully as all preparations of gold, and used for trituration.

BADIAGA.

Badiaga, Riversponge, From Spongia palustris L. Spongilla lacustris Link. Sex. Syst. Cryptogamia (Cl. XXIV.). Nat. ord. Algæ.

This beautiful green alga, to be found in stagnant waters, also ditches in Germany, but especially in Russia; very similar in texture to the seasponge, appears in branching ramifications like stags' horns with rounded corners and roundish ends, from the thickness of a quill to that of a finger. It has a peculiar strong smell like putrescent crawfish. Taken fresh out of the water during the warm summermonths, it is freed from the water imbibed in its pores by moderate pressing and then prepared for tincture after Rule 3, the smell of which is strong and the colour pale yellow-green.

BARYTA ACETICA.

Terra ponderosa acetica, Barytes aceticus. Barytum oxydatum aceticum. Acetas Barytæ s. baryticus. Acetate of Baryta.

This salt is obtained by dissolving pure carbonate of Baryta in concentrated vinegar prepared from acetate of Soda, till it is neutralised, whereby the aid of a moderate heat may be used. The liquid is diluted with the equal quantity of distilled water, filtered evaporated till it becomes dry in the water bath and preserved in a well-stopped glass.

For medicinal use a solution of a mixture of one part of strong spirit of wine and three parts pure water is prepared in the decimal proportion and dispensed as *Liquor Barytæ aceticæ* (*Baryt. acet. 1*). The second attenuation is made from this with diluted spirit of wine, the following with strong spirit of wine.

BARYTA CARBONICA.

Terra ponderosa aerata, Barytes carbonicus. Barytum oxydatum carbonicum, Carbonas Barytæ s. baryticus. Carbonate of baryta.

Through decomposition of a solution of pure muriate of ba-

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ryta in ten times as much distilled water, by means of carbonate of ammonia a glaring white and loose precipitate is obtained, to be washed in pure water till no trace of muriate of ammonia is more to be found. After filtration it is dried with gentle warmth and preserved.

Triturations are to be made from it.

BARYTA MURIATICA.

Terra ponderosa salita, Barytes muriaticus, Barytum chloratum s. oxydatum muriaticum, Baryta hydrochlorica, Hydrochloras baryticus, Chloretum Baryi cum aqua. Chloride of Barium, muriate of Baryta.

Prepare a mixture of 4 pounds of ponderous spar (native sulphate of Barytes), one pound of charcoal, both reduced to a most subtle powder, and $^1/_4$ part of pulverulent carbonate of soda, make it moist with little water, so that it may be stamped fast into a Hessian crucible, whereupon this is brought to a white heat in a windfurnace, in which heat it is kept for half to an entire hour. The mass, taken out of the crucible yet hot, is to be reduced into a subtle powder, mixed, after having put a small quantity of it (about two ounces) aside, with four times as much water, and add gradually muriatic acid. Evolving much sulphuretted hydrogen-gas most of the powder will dissolve, which dissolution is to be supported with application of warmth. Muriatic acid is so long added, till after ceasing of the evolution of gas a slight excess of the acid takes place. The liquid being afterwards filtered, the rest well washed and the whole inspissated to four pounds, to it is added so much of a solution prepared of the reserved sulphuret of barytes in six times as much water, that any mingled iron may be precipitated.

The liquid after being again filtered is evaporated to dryness, then again dissolved in three times as much distilled water, the solution filtered and the crystallisation brought about. The crystals obtained present colourless, pellucid, foursided tables of a tolerable specific gravity, permanent in the air and of bitterish acrid taste.

Preparation like that which has been stated under *Baryta acetica.*

BELLADONNA.

Hb. Belladonnæ s. Solani furiosi s. lethalis. s. maniaci. Belladonna. Deadly Night Shade, common Dwale. From Atropa Bel-

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ladonna L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1. Nat. ord. Solaneæ. Brandt & Ratzeb. I. 17. Hayne I. 45. Düsseld. 191.

A perennial plant of common growth throughout Germany, France, England, Italy, and found under bushes, on the slopes of mountains, in thick forests, especially also on newly uncovered places in woods. The spindle-shaped, branched, thick and juicy root brings forth stems 4—6' high, round, strong, tripartite-forky branched, striped, reddish brown; the leaves partly alternate, partly opposite, are near the root 6—8" long and half as broad, above decreasing shorter, egg-shaped, on both ends pointed, entire, rather smooth, the lower base at the veins slightly set with hair, feel therefore soft. The flowers stand single in axils, but form not seldom at the end of the branches leaved racemes, turned to one side; the bell-shaped corolla is about one inch long, dirty green-yellow with brownish veins, violet at the forepart; the ripe berry is very like to the black cherry, but is of a nauseating, only feebly sweetish taste, it is polyspermous.

The leaves, especially those nearest the root, and the lowest of the stem are gathered before the flowering time, in June or July, and prepared after Rule 2 for essence, which has a saturated yellow-brown appearance, narcotic smell and nauseate taste.

BERBERIS.

Barberry, pipperidge bush. From Berberis L. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1). Nat. ord. Berberideæ. Hayne I. 41. Düsseld. 368.

This bush, which is 6—8' high, grows all over Europe on dry hills, on the edges of woods and hedges; it has numerous long, virgated branches, set with many long thorns, on which the inverse egg-shaped, serrate and ciliated shining leaves stand fasciculated; the flowers proceed from these in rather long, pendulous racemes, which produce six petaled yellow flowers, smelling peculiarly nauseate, and subsequently ovate, red berries of sour taste.

Late in autumn the long, branched, spread root of this bush is dug out for preparing according to Rule 1 a tincture from the bark which is (like the whole wood) internally saturated yellow and renders the tincture yellow-brown, and of a bitter taste.

BISMUTHUM.

Magisterium Bismuthi s. Marcasitæ, Marcasita alba, Calx Bismuthi, Album hispanicum, Bismuthum subnitricum præcipitatum.

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Nitras s. Subnitras Bismuthi. Magistery of Bismuth, Trisnitrate of Bismuth, Bismuth-white, Spanish white, Oxide of Bismuth.

To four parts of pure concentrated nitric acid is added by degrees in a roomy glass-alembic one part of coarsely powdered metallic Bismuth free from arsenic and with this addition ceased, as soon as a gray precipitate is formed, or no decomposition of nitric acid is observable. The liquid then is poured off from the metallic residue undissolved, acidulated if necessary, with a little nitric acid, evaporated in a porcelain dish to one third of its volume, filtered, and set aside for crystallisation. The obtained crystals being neutral nitrate of bismuth are triturated with four parts of hot distilled water after having been washed speedily with cold water, and then poured into a large, wide glass-vessel, containing twenty five times as much hot distilled water as the salt acted upon, under continual stirring. After settling and decanting as far as possible the liquid fluid from the obtained precipitate, this is washed sometimes with distilled water. Collected upon the filter and dried, and carefully preserved against the influence of the light, it has a dazzling-white, crystalline-shining appearance.

We prepare triturations from it, which like the preparation itself are to be preserved in blackened glasses.

BORAX.

Borax venela s. raffinata, Natrum boracicum, Boras Sodæ, Biboras natricus cum aqua. Borax, Tincal, Tincar, Venetian borax, Biborate of Soda.

The salt obtained in commerce under the name of purified borax is again purified by dissolving and crystallizing. It presents white, rectangular prisms of four sides or irregular ones of six or eight sides, it loses its water of crystallisation superficially in the open air and reacts alkaline.

The first solution of this salt can only be prepared with 5%, in as much as more would soon crystallize out of the solution again; even in this proportion at a low temperature crystals separate from it, which should be well examined, before farther attenuations are made; and in which case it is to be dissolved again.

BOVISTA.

Bovista officinalis, Fungus chirurgorum. Puff-ball, bull-fist, puck-fist, puck-ball, puck-foist, puffin, bunt, devil's snuffbox, fuzz-

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ball. From Lycoperdon bovista L. Sex. Syst. Cryptogamia (Cl. XXIV). Nat. ord. Fungi. Diisseld. 1.

Throughout the whole year the puff-ball is found, but especially in the beginning of autumn on pasturegrounds and dry meadows of Europe. Nearly round as a ball it is at the base narrowed to form a thick, foldy stalk. It is of a variable size between a diameter of 1″ to 1′; when young it is white, later of dirty yellow colour, finally its colour turns into umberbrown. The contents of the receptacle are white at the beginning and juicy, turn then greenish and pulpy, at last brown and dry like dust; it smells nauseous and has a flavourless, mouldy taste.

Not before this last mentioned state of ripeness the entire fungi are used, by extracting them after Rule 1 with *diluted* spirit of wine for tincture, which has a brown colour and little smell. The dusty sporules only can be used for triturations, for the wrapper cannot be reduced into powder.

There seems no conformity to exist, which of these two forms deserves the preference on account of its efficaciousness; therefore it will be necessary to have them both ready.

BRANCA URSINA.

Herba et radices Brancæ ursinæ germanicæ s. Sphondylii Heraclei s. Acanthi vulgaris s. Pseudoacanthi s. Pastinacæ vulgaris. Hercules's all heal, bear's wort, cow's parsnip. From Heracleum Sphondylium L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2) Nat. ord. Umbelliferæ. Hayne VII. 10.

This biennial or perennial plant grows on the meadows, pasture grounds and woody grassplaces of Germany and nearly all Europe; its spindle-shaped, branched, long, externally yellow brown root, containing internally a yellow milky juice, sproots out stems, 2 to 4′ high, erect, tubular, furrowed, roug-haired, with large, manifold compound, sharp-haired, dentate leaves. The large unequally flowering white or reddish umbels stand at the end.

The root dug out during the summermonths and flowering time is used for essence after Rule 2, which is of a light brownish-yellow colour and nauseous-bitterish smell and taste.

BROMIUM.

Bromum, Murides, Murina, Bromina. Bromine.

From the different mother liquors of saltsprings containing bro-

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mine, that of Kreuznach may be selected, having become an article of trade. By evaporation to its third part and crystallizing it is freed from the greater part of the salts and muriatic acid contained in it, as well as by adding sulphuric acid as long as precipitate ensues from the lime it contains. Add in a still with short neck and well-fitting glass-head, to 6 to 9 pound Avoir du pois (of the original quantity) one ounce of finely triturated manganese and also two ounces of sulphuric acid, diluted with as much water, and bring the mixture to boiling, after having closed all jointures most carefully. The beak of the head is to be elongated by a glasstube, and let into a tubulated receiver, upon glowed chloride of calcium. As soon as no brown vapours are more evolved, the labour is ended and stopped immediately. If a proper receiver (for instance a tubulated retort) has been selected, from this the rectification of the bromine may be effected immediately, as soon as its connection with the evolving vessel is interrupted and the tubulus closely stopped.

Great precaution is necessary in these labours. One must protect one's self against the noxious vapours of the Bromine; the distillation must be effected gently and with gentle heat, the receiver kept as cold as possible. It is best to undertake the labour in free air, having the mouth wrapped up.

The Bromine obtained is a dark brown-red fluid, in thick layers untransparent, in thin ones beautifully fiery red, translucent, of a suffocating odour, like chlorine, extremely irritating to the eyes, and of a shriveling, caustic taste. It is to be preserved in glass-vessels with well closing glass stoppers in a cool place.

For medicinal use watered spirit of wine serves as a dissolvent in the known proportion; but the two first attenuations are easily decomposable, therefore not long preservable.

BRUCEA.

Cortex Angusturæ spurius s. falsus s. ferrugineus s. ostindicæ s. Pseudoangusturæ. Spurious or poisonous Angustura bark. Formerly this bark was believed to come from Brucea ferruginea L Sex. Syst. Tetrandria Monogynia (Cl. IV. O. 1.) Nat. Syst. Terebinthaceæ; but newer chemical researches put it out of question that its mother plant is Strychnos nux vomica, the poison nut; Sex. Syst. Pentandria Monogynia (Cl. V. O. 1) Nat. ord. Apocyneæ. Göbel I. 2. F. 5—7.

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It consists mostly of rolled, but also flat pieces, sometimes curved backwards, of different diameter, having mostly a spongy, rust-coloured and white-gray cover, and more yellow, small-pox-like tubercles. The broken flats of this bark are smooth, ligneous and yellowish, outwards darker, inwards lighter, not resinous. The inner base is gray-blackish, sometimes dirty-yellow. Compare the article "*Angustura.*"

The tincture prepared after Rule 1 has a yellow colour and the taste of the bark.

BRYONIA.

Radices Bryoniæ albæ s. Uræ anginæ s. Vitis albæ. White Bryony, wild vine, nep or hops, white vine. From Bryonia alba L. Sex. Syst. Monœcia, Monadelphia (Cl. XXI. O. 8.) Nat. ord. Cucurbitaceæ. Hayne VI. 23. Düsseld. 271. Göbel II. 39.

A perennial plant occurring in fences, hedges and bushes though not frequently, yet spread nearly all over Europe, which climbs high. Its turnip-shaped, strong root, of a weight till to five pounds and more, contains a quantity of juice, appearing milky from much amylum, which is of acrid nauseous taste. The climbing stems are soft, angular, rough to the feeling and climb ten feet high and more, if they only find objects they can cling to. The petiolate, handshaped, five-lobed leaves stand alternately. The yellowish or whitish-green flowers stand in small racemes in the axils, and leave behind black, polyspermous berries.

Late in autumn after complete ripeness of the berries, the root is dug and prepared for essence after Rule 2. The juice pressed out containing very much amylum, it is useful, to remove this by settling and percolating before the spirituous extract is added. The essence, when ready, is also yet in need of longer time to be cleared perfectly than other ones, in as much as the secession of a rest of amylum takes place very slow. The tincture is of a pale yellow colour, weak odour, nauseous and somewhat harsh taste.

CADMIUM.

Klaprothium, Melinum. Cadmium.

This metal occurs only very seldom in peculiar ores, but as a rule it is a companion of the zincores, namely of the calamine, and is precipitated out of a solution of it prepared with sulphuric

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acid in excess by sulphuretted hydrogengas in the form of sulphuret of cadmium, having a beautiful fiery lemon yellow colour, whose purity is acknowledged through its perfect volatilization on a heated platinumplate.

The precipitate obtained in this way, which must be well washed, is to be dissolved in concentrated muriatic acid; after removing any excess of the acid by evaporating, the solution is decomposed by adding carbonate of ammonia in excess, the precipitate, being carbonate of cadmium, is carefully washed, filtered, dried, and afterwards slightly glowed. The oxide of cadmium obtained in this manner is dissolved in pure diluted sulphuric acid and the salt set aside for crystallization. It forms colourless and odourless pellucid rectangular prisms.

To obtain the pure metal fit for our purposes from them, there is only reduction on the galvanic way wanted, which is effected in the following manner: —

A solution of sulphate of cadmium prepared with twenty times as much distilled water is poured in a flat porcelain dish, wide enough, not to be replete with the liquid higher than some inches above the bottom, and in this are put several little bars of pure East-indian zinc *. The decomposition begins forthwith, cadmium sticking round the zinc-bars in the form of a gray glittering covering. That this may not collect itself in thicker and more coherent layers, it is necessary not to leave the operation to itself, but to scrape off the precipitate formed from the bars by repeated scraping with a piece of wood cut sharp like a knife, making room for new layers. Towards the end of the operation when this takes place by itself more slowly, because the ley becomes weaker, this precaution is less necessary.

As soon as the decomposition is finished the ley now converted into sulphate of zinc, is poured off from the little lumps of reduced cadmium, which are very similar to spongy platinum, these are repeatedly washed with pure water and dried. For separating some larger lamels possibly arisen, which might not easy to be worked on account of their toughness, the metalpowder is finely triturated in a porcelain mortar and afterwards sifted through a fine cloth. It presents a very delicate, lead-gray powder without

* These zinc-bars are easily cast in the moulds of the lapis infernalis from the purest metal. Strips of zinc of commerce are not fit for being applied, because the parts of charcoal from this impure metal precipitated along with the preparation would adulterate it.

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brightness, but which assumes a metallic brightness under the pressure of a steel. Triturations are prepared from it.

CAINCA.

Radices Cainnæ s. Caincæ s. Cahincæ s. Serpentariæ brasiliænæ. Cahinca. Snowberry. From Chiococca racemosa L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Rubiaceæ. Göbel II. 6. Düsseld. Suppl. 59.

This root comes from Brazil into commerce in pieces 3 to 4" long and as thick as a finger and more; the thickest pieces distinguish themselves by apophyses, being partly under, partly between the bark branched lengthwise like veins, which may be partly separated easily. The bark of the thinner pieces is smooth, that of the thicker ones sometimes annulated, gray-brown, the interior yellowish-gray, of tolerably strong odour and taste, similar to that of gentian. The ligneous pith is yellow-white, strong, without odour and taste. We make use only of the bark of the root for preparing a tincture of light brownish-yellow colour and nauseous-bitter taste after Rule 1.

CALADIUM.

Poisonous Arum. From Arum seguinum L. Sex. Syst. Monœcia Polyandria (Cl. XXI. O. 7.) Nat. ord. Aroideæ.

Stem 5 to 6' high, more than one inch thick, round, knotty. Leaves ovate-oblong, smooth, at the apex neared, petioles above canaliculate and clasping, sheath of the flowers pale green, its innerside purple, spadix yellow. From this plant, coming from the Eastindies, the essence must be drawn from certain medical source (Dr. Hering), if an occasion to get it from a botanical garden of Europe should not offer, in which case the leaves are used after Rule 2 for tincture.

CALCARIA ACETICA.

Sal cretæ, Sal cancrorum, Calx acetica, Acetas calcicus. Acetate of Lime.

Let pure carbonate of lime be dissolved under continuous gentle boiling and stirring with concentrated vinegar prepared from acetate of soda. The neutral liquid after being a little diluted, is filtered

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away from the nondissolved lime and afterwards gently evaporated to dryness. The milkwhite powder, is permanent in the air, smells of vinegar, and is to be preserved in well-stoppered glasses, for preparing after the Rule given under the article "*Baryta aceticu*" a liquor, which must be likewise perfectly clear and colourless.

CALCARIA ARSENICICA.

Arseniate of lime. Occurring native, under the name of Pharmacolite.

To the artificial production of this salt, that of the arsenic acid is to be effected before. It is obtained by distilling four parts of powdered arsenious acid with a mixture of twelve parts nitric acid and one part muriatic acid in a retort till the residue is dry, which is but little glowed. The acid obtained in this way and dissolved again in ten times its quantity of water, is neutralized by carbonate of potash and the obtained arseniate of potash used for decomposing a solution of chlorine-calcium, dropping in from the latter (but not vice versa) as long as a white insoluble powder, the required preparation, is precipitated.

Carefully washed and dried it serves for triturations.

CALCARIA CARBONICA.

Calx, Carbonas calcariæ s. calcicus. Calcareous earth, Carbonate of Lime (Chalk, oyster-shells, egg-shells).

For this preparation the use of oyster-shells is the best, which consist in itself of carbonate of lime, but which must be, for freeing them from mechanical adulterations and for changing them at the same time into a subtle and loose powder, subjected to the following procedure.

After having cleaned the oyster-shells by boiling them for half an hour with water feebly acidulated with muriatic acid, and after having brushed each single piece for cleaning them from earthy, saltish and other adulterations, they are accumulated in a wind-furnace, having good draft, upon already glowing charcoal in layers alternately with dead coal, afterwards the whole is fanned to one glow and so continued, till a piece of shell taken out for test, appears perfectly white and bears pulverisation without causing much trouble. The whole is now cautiously taken out of the fire, so that it is soiled neither by pieces of charcoal, nor ashes, then col-

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lected in a flat dish; and so long exposed to the open air, till the lime has imbibed sufficient carbonic acid, for which, according to the quantity, more or less time is required. As soon as one is convinced by infusion of a diluted acid upon some triturated powder that no more caustic lime exists, all is put into a mortar, reduced to subtle powder and the coarser parts are separated by sifting through fine linen after the rules of art. It is a dazzling white, very loose and inodorous powder of lixivious astringent taste.

Triturations are prepared from it.

CALCARIA CAUSTICA.

Calx viva s. usta, Calcaria pura s. caustica, Calcium oxydatum, Oxydum calcicum. Burned or unslacked lime, caustic lime, oxide of calcium.

Oyster-shells are brought as is described in the preceding article, to a red heat, only that this is continued stronger and for so long a time, till one is convinced by testing that all carbonic acid is expelled, for which purpose pieces out of different layers are to be examined. Immediately afterwards they are subtilely triturated in a mortar, sifted through linen, and preserved in airtight well stoppered glasses.

For medicinal use a tincture prepared after Rule 1 with *diluted* spirit of wine is to be preferred to trituration; since during the trituration carbonic acid is again imbibed. But this tincture (*Spiritus Calcariæ causticæ*) is most carefully to be protected against the access of air, and it must be rejected as soon as it has attracted carbonic acid, and prepared anew.

Colour pale straw-yellow, taste caustic, odour calcareous.

CALCARIA IODATA.

Calcaria hypoiodosa. Iodinelime. Iodite of lime.

It is prepared by trituration of eight parts fresh-made but again cooled hydrate of lime (for which purpose the burned oyster-shells are sprinkled with water immediately after being calcined *, that they fall to powder under heat and swelling) with twenty seven parts of pure dry Iodine. It presents a black powder, smelling slightly after Iodine, of a very astringent taste, dissolving for the

* Compare the preceding article.

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most part in water, becoming a darkbrown fluid and decomposing exceedingly easy through acids or warmth.

All combinations of Iodine acting decomposing upon organic substances also of this preparation a trituration is not admissible, but solutions are to be made, which must be preserved in blackened glasses.

CALCARIA PHOSPHORICA.

Terra ossium s. Calcariæ phosphoricæ. Calx phosphorata. Subphosphas calcicus. Bone-ashes, bone-earth (white burned harts'-horn). phosphate of lime.

The phosphate of lime, known in the pharmacies under the name of *cornu cervi ustum album*, is not pure, containing besides other heterogeneous admixtures, always a good part of carbonate of lime.

We therefore prepare a pure and perfectly neutral preparation by decomposition of acetate of lime with phosphate of soda ($1^1/_2$ parts of the last being necessary to one part of the first), for which purpose both salts, dissolved in the proper quantity of water, are mixed together. The phosphate of lime precipitating in the form of a crystalline powder, is carefully washed with pure water, collected upon a filter and dried; it is white, loose, and has a chalklike taste.

There are triturations to be made from it.

CALCARIA SULPHURATA.

Hepar sulphuris calcareum, Sulphuretum Calcii s. calcicum, Calcium sulphuratum. Sulphuretted lime, Liver of sulphur prepared from lime.

Equal parts of pure caustic lime and pure sulphur, obtained after our prescriptions, are mixed accurately, pounded to a lump in an earthen crucible, covering the surface with a layer of moist powdered chalk from half to an entire inch thick, by pressure for obviating external adulteration; then it is covered with a lid, and exposed in the beginning to a gentle fire, but which is quickly to be increased as soon as it begins to glow and to be kept for half an hour to a red heat. Then taken out of the fire and cooled slowly, the yellowish-white contents, smelling strongly of hydrosulphuretted gas, after careful removal of the chalk-cover, are triturated to a uniform powder and speedily preserved in well closing glasses.

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Triturations are made of it. But a very efficacious tincture, that keeps long, may be prepared from it with watered spirit of wine, which is of a pale straw-yellow colour and intensive odour and taste.

CALCARIA SULPHURICA.

Gypsum, Selenites, Alabastrum, Glacies Mariae, Lapis specularis, Sulphas calcariæ s. calcicus. Gypsum, Selenite, specular-stone, isinglass-stone, Moscovy-glass, sulphate of lime.

Though this salt occurs frequently in nature and is known under the above-mentioned names, we rather prepare it for medicinal use in the chemical way, for possessing an always uniform remedy, analogical to the phosphate of lime by decomposition of acetate of lime by means of sulphate of soda. The white heavy, nearly insoluble powder is well washed, dried, and used for triturations.

CALENDULA.

Herba Calthæ sativæ s. vulgaris, Herba Populaginis s. Verucariæ. Garden Marygold. From Calendula officinalis L. Sex. Syst. Syngenesia Polygamia necessaria (Cl. XIX. O. 4). Nat. ord. Corymbiferæ (Asteraceæ). Hayne IX. 47.

This sufficiently known plant of Europe grows in all gardens, where it is a mere weed. The ascending angular stem is somewhat sharp, branched, 1 to 1½′ high, the alternating leaves are half clasping, soft-haired; the single, long-petiolate flowers orange coloured, the calyces especially resinous, viscid and of a strong balsamic-resinous odour.

From the plant gathered during the summer-months, the flowers, buds and younger leaves are to be taken for preparing an essence after Rule 2, which is of a light-brown-yellow colour and weak odour.

CAMPHORA.

Gummi Camphoræ, Camphora chinensis s. japonica, Camfor, Caphura, Cafur, Canfer. Camphor. From Laurus Camphora L. (Camphora officinalis). Sex. Syst. Enneandria Monogynia. (Cl. IX. O. 1) Nat. ord. Lauraceæ (Laurineæ).

This volatile resin (or concrete volatile oil) obtained in China and Japan from the leaves, branches and trunks of different trees,

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belonging to the Laurineæ as well as to the Dipterocarpeæ (in which it exists already formed) by sublimation in great quantities, occurs commonly as a drug under the name of "purified or refined camphor" in round convex cakes, of a weight from 1 to 2 pounds, of semipellucid, white colour, strong, specific volatile odour, acrid, aromatic-burning taste and crystalline, crumbling texture. It is highly volatile and burns totally with a flame yielding much soot.

We prepare a solution of it in the decimal proportion with strong spirit of wine, which is used as first potency for farther attenuations. It must be quite colourless and of strong odour and taste.

CANCER.

Cancer astacus. L. Fam. Crustacea. Crawfish, rivercrawfish, pondcrawfish.

This crustaceous animal, spread over all Europe, an inhabitant of the smaller rivers, brooks and ponds, is so well known, that it needs no further description.

A living animal (it is best during the summermonths) is bruised in a stone mortar to a fine pulp, poured over (after Rule 3) in a proper vessel which is to be closed, with double its quantity of strong spirit, and the yellowish liquid, possessing clearly a smell of crawfish is filtered off after some days.

CANNABIS.

Hemp. From Cannabis sativa L. Sex. Syst. Diœcia Pentandria (Cl. XXII. O. 5.) Nat. ord. Canabineæ (Urticeæ). Hayne VIII. 35. Düsseld. 102.

This well known plant, indigenous to the East, with us cultivated in fields, has an erect, stiff stem, which, according to the goodness of the ground attains a height of 1 to 4' and more. The opposite, long-petiolate leaves consist of lanceolate, pointed, serrato-denticulated leaflets, set with stiff hair, of which that standing in the midst, is the longest. The masculine, greenish-white, diœcious flowers form a long end-raceme, the feminine spiculæ with many leaves; both exhale (especially in damp evenings) a strong balsamic-narcotic odour.

At the flowering-time, in May and June, we gather the flower-

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ing tops and top stem-leaves (by preference from feminine plants) for preparing a tincture from them after Rule 3, which is of a green-brown, tolerably dark colour, and has the odour of the flowers.

CANNABIS INDICA.

The herb brought since some years into drug commerce under the name of *Guaza, Herba Cannabis indicæ,* is of no other origin than Cannabis sativa.

The Indies, the original country of the hemp, generates through its climate more vigorous products, richer in medicinal substances than Europe situated more northerly; therefore the preference may be founded which has been given to this remedy before the indigenous.

As we get it, it presents the tops of the branches, dried fast together, of a dirty gray-green colour (not unlike the residue of a pressed plant), with peculiar balsamical-resinous, strong odour, and a similar, afterwards little rough taste. Very often seeds, half or quite ripe of a shape a little smaller but quite like our hempseed, are found. The stems which are ligneous, one foot long and more, on which the leaved branches sit yet partly, agree likewise with ours. They must be set aside as inefficacious, and only the abovementioned tops, which are rich in leaves are to be extracted for tincture after Rule 1; this has a saturated darkgreen-brown colour and the peculiar odour.

CANTHARIDES.

Muscæ hispanicæ, Lyttæ vesicatoriæ, Meloës vesicatorii. Blistering flies, Spanish flies, blister flies. Lytta vesicatoria Fabr. Fam. Coleoptera, Brandt et Ratzeb. II. 18.

Chafers 6 to 12‴ long, of greenish gold-yellow colour with coppery or steel-blue hue; black, filiform feelers and black feet. They have a peculiar, sweetish, irritant odour, and acrid burning taste. They settle in Germany on elder, ash and lilac. It is the same whether we make use of self-collected or of such which are bought as a drug, if we only select such of these insects, as are not yet wormeaten, are vivid shining, and smell not nauseous musty but fresh and acrid.

Let a tincture be prepared from them after Rule 1 with *streng-*

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thened spirit of wine. which will be of green-yellowish colour and burning taste.

CAPSICUM.

Piper hispanicum s. indicum s. turcicum, Fructus Capsici annui. Common capsicum, Chilly pepper. Guinea pepper, Cayenne pepper. From Capsicum annuum L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1.) Nat. ord. Solaneæ. Hayne X. 4. Diisseld. 190.

The dried, leatherlike, ripe seed-capsules or pods, of scarlet or darkpurple, also orange-yellow colour, 2 to 4″ long and 1 to 1½″ thick, spindle-shaped, frequently a little curved, are yet provided with calyx and pedicel, the interior hollow, containing besides many kidney-shaped, flat, yellowish seeds (chillies), the remains of the carpels. Its taste is exceedingly acrid and burning, the odour weak, but causing heavy and lasting sneezing by its dust.

Though this plant is raised in gardens everywhere in Germany, yet the seedpods brought us in dry state from the hot countries deserve the preference. We select the entire, most fresh, not wormeaten pods, free them from the pedicels and marrow with the seeds, cut them with scissars into narrow strips and prepare then after Rule 1 a tincture, which, according to the colour of the fruit selected, turns out of yellow-red to garnet-red colour, is odourless and of burning taste.

CARBO ANIMALIS.

Animal charcoal, Leather-charcoal, Bone-charcoal, Flesh-charcoal.

Hahnemann did burn thick neat's leather so long between ignited charcoal, till the last little flame was just vanished, choked afterwards quickly the burning leather-charcoal between stoneplates, powdered it, and made his experiments and experiences with this preparation.

The bone-charcoal known under the name of *Ebur ustum nigrum* as well as the flesh-charcoal *Carbo carnis*, which has become officinal in modern times (compare Pharmacop. Saxonic. ed. II. 1837), have indeed likewise animal origin; but it is evident, that they, in regard to chemical composition differ more or less from the above-mentioned preparation, and are *not* allowed to be substituted for it.

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The choking of the glowing leather-charcoal is effected more to the purpose in a crucible or similar vessel to be covered with a well closing lid; the powder must immediately be preserved in tightly stoppered glasses; let it be tolerably black, dimly shining, odourless and tasteless.

Triturations are made of it.

CARBO VEGETABILIS.

Wood charcoal, vegetable charcoal, also only "charcoal" (under which term animal charcoal is generally not understood).

Select the hardest, middling heavy pieces of beach or birch-charcoal, free from bark, which allow to perceive yet perfectly the texture of the wood and to conclude about perfect carbonization by a certain clear sound. These are divided into pieces at best as large as a fist, again well heated, afterwards choked quickly in an earthen vessel with a well closing cover, and after cooling and removal, by blowing off, of those ashy parts, that have been formed, reduced to a subtle powder, and preserved in closed vessels in a dry place. The powder is more black than that of animal charcoal, and has, may it ever be so subtle, in sunlight a glittering appearance; it is besides likewise without odour and taste.

Preparation like that of animal charcoal.

CARDUUS BENEDICTUS.

Herba Cardui sancti s. Cnici sylvestris s. Acanthi germanici. Blessed thistle. Holy thistle. From Centaurea benedicta. L. Sex. Syst. Syngenesia, Polygamia æqualis (Cl. XIX. O. 1.) Nat. ord. Synantheræ. Hayne VII. 34. Düsseld. 223.

This plant, indigenous to Southern Europe, is cultivated frequently as medicinal herb in Germany. The erect, somewhat angular, often reddish coloured stem is from the ground divided in many long, expanding branches, and everywhere set with long, crisp, somewhat viscous hair. The root-leaves are about one foot long, run down in a leafstalk, are pinnate, dissected, and provided with distant, sinuously dentate segments; the leaves of the stem are sessile, all set with hair like the stem and beautiful high-green. The yellow flower-heads appear single at the end of the stems and branches, surrounded by several large, leafshaped bracteates; the oval, bellied calyx consist of close adjoined green scales, ending in long expanding thorns, and connected with the

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flowerets by cobweblike hairs. The whole plant has a peculiar, not agreeable odour and saltish-bitter taste.

In June or July, shortly before the flowers come out, the leaves together with the flowerbuds are gathered and prepared after Rule 2 for essence, which has a green-brown colour and the taste of the plant.

CARDUUS MARIANUS.

Semen Cardui Mariæ s. Cardui maculati, Semen Lactei s. Spinæ albæ. St. Mary's thistle, Lady's or milk thistle. From Carduus marianus L. Sex. Syst. Syngenesia, Polygamia æqualis (Cl. XIX. O. 1). Nat. Ord. Synantheræ. Düsseld. 221. Hayne VII. 31.

The annual plant, growing wild among rubbish and dikes in Southerly Europe, Asia, the East Indies, is cultivated also among us on account of its beautiful form and variegated leaves in gardens for ornament. The aculeate, fleshy, smooth, shining green leaves are spotted white. The violet flowers appearing in June stand in knobs to 3″ thick, on long peduncles.

The officinal seeds ripe in August, they are smooth, brown-shining, oblong-ovate, 2‴ long and 1‴ broad, above a little more broad, flat-pressed, provided with a simple sessile hair crown, but easily falling down; the kernel is white, oily sweet. From the seeds bought in commerce the thin, lighter, pale-coloured are to be sorted out as less efficacious. With *diluted* spirit of wine a tincture is prepared from them after Rule 3, which has a light-brownish colour and little taste.

CASCARILLA.

Cortex Cascarillæ s. Gasgarillæ s. Chacarilla, China falsa. Cascarilla. False or gray Peruvian bark. Comes from different plants of the genus Croton (Croton Eleuteria Schwarz. Sex. Syst. Monœcia Monadelphia Cl. XXI. O. 1. Nat. Ord. Euphorbiaceæ), according to Linnæus from Clutia Eluteria Sex. Syst. Monœcia Monadelphia (Cl. XXI. O.1). Nat. ord. Euphorbiaceæ. Göbel I. 3.

This bark commonly occurs in rolled up quills sometimes also in open, heavy, hornlike, hard pieces, 1 to 7″ long and having not above 1″ in diameter, to a thickness of 1 to 2‴. The outer side is often covered with a white-grey, lichenlike cover (similar to that of Peruvian bark), rough by longitudinal tubercles and cross clefts

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of the epidermis; the inner side is commonly smooth; both have a dimly gray, dusted appearance. The fracture is brittle, even, shining; the odour little aromatic, on burning charcoal very strong and like musk; taste somewhat rough, bitterish, aromatic.

After Rule 1 a tincture is prepared from it with *diluted* spirit of wine, having a yellow colour and tolerably strong odour and taste.

CASTOREUM.

Castoreum moscoviticum s. russicum s. sibiricum. Castor, Castoreum, Beaver's cod. From Castor Fiber L. Cl. Mammalia, Ord. Rodentia. Brandt et Ratzeb. I. 3, 4 and 4a.

The genuine Russian castor occurs in egg-shaped, roundish or pear-shaped long cods, commonly a little flattened by pressure, from which commonly two stick together and weigh two to six ounces. The colour of the outer skin, which is $^1/_2$ to 1‴ thick, very tough, leatherlike, is dark brown or blackish, that of the contents yellowish-brown or reddish-brown; it is first soft, after further drying crumbling, interwoven with fine membranes similar to sinews; it is of very peculiar, strong, nauseate odour, reminding of something like juffts, increasing in drying and trituration, and of a similar, bitterish taste, which lasts long.

Quite as much the Bavarian castor *Castoreum bavaricum* is valued, which occurs in much larger codpairs (to $1^1/_2$ pound), which are always softer and moister than the Russian castor.

From the dried contents of the follicles we prepare, after having removed all that is membranaceous, triturations, which deserve at all events the preference to the tincture made after Rule 1 with strong spirit. The latter is of a light yellowish-brown colour and the smell of castor.

CAUSTICUM.

Hahnemann's Caustic, substituted for his former ***Tinct. acris sine Kali.*** He gave the following prescription for it.

Let a piece of fresh burned lime of about two pounds, be dipped for about a minute in a vessel filled with distilled water; then put it in a dry bowl, where it will soon fall to powder, developping much heat. From this subtle powder take two ounces, mix it in a warmed porcelain mortar with a solution prepared of two ounces of bisulphate of potash, which has been made hot to

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glowing and molten, then again cooled and pulverized, and two ounces of seething water. This mixture is put in a glass cucurbit, the head luted with a piece of wet bladder, and to its tube the receiver is put which must stand half in water, and then the whole liquid is distilled with gradually increased heat to dryness. The educt, a little more than $1^1/_4$ ounces, clear like water, contains that substance in concentrated form, smells like lixivium of caustic potash and is upon the tongue of astringent taste, burns in the throat, congeals under lower degrees of cold than water and promotes the putrescence of animal substances put in it very much *.

Muriate of baryta shows adulteration through sulphuric acid, oxalate of ammonia indicates lime contained in it; it is to be preserved in a well stoppered glass.

The first potency is prepared with *diluted* spirit of wine, the following attenuations are to be made with *strong* spirit of wine.

CHAMOMILLA.

Flores Chamomillæ vulgaris s. Chamœmeli. Common chamomile, common feverfew. From Matricaria chamomilla L. Sex. Syst. Syngenesia Polygamia superflua (Cl. XIX. O. 2). Nat. ord. Synantheræ (Asteraceæ). Hayne I. 3. Düsseld. 241.

Though this plant, growing abundantly wild in the fields, near roads, in clover- and fallow fields etc., occurs all over Europe and is well known, still it is liable to frequently being mistaken for

* Considering this preparation has been written, disputed and scorned so very much from the chemical as well as from the medical point of view, that a pamphlet might be compiled about it. The author believes therefore that he ought not add to this literature anything more by stating his own views, which depart not at all from those of other chemists. He confined himself to the literal repetition of the original prescription of Dr. Hahnemann, and remarks only, that, so often the remedy has been prepared by him, he never was able to find out the properties stated by its author the smell excepted (which is similar rather, to vapour of fresh lime than to that of caustic lixivium).

Buchner has shown and it is known long ago that the preparation contains some ammonia in free state, which seems also to be constant, and this observation is sufficient for admitting some medicinal value to the remedy notwithstanding all chemical objections.

That Causticum never can stand in the place of that Tinctura acris sine Kali, the faulty prescription of which is shown (compare that Article), in regard either of chemistry or of medicine, is a matter decided long ago, and confirmed by experience. This is the reason, why this last preparation has been specified also.

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similar species of its family. Instead of a prolix description, we will only direct the attention to the main characteristic, by which it is distinguished from all. This is the naked, conical, smooth and at the same time hollow receptacle of its flower.

From the plant, bearing flowers throughout the whole summer, the flowers are used for tincture after Rule 3, which is of greenish-brown colour and possesses the odour and taste of the plant in a high degree.

CHELIDONIUM.

Herba et radices Chelidonii majoris. Celandine, Salentine. From Chelidonium majus L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1.) Nat. ord. Papaveraceæ. Hayne IV. 6. Düsseld. 408.

This plant spread over all Europe, growing spontaneously on hedges, roads, waste places and in bushes is very well known. Its stems, 1 to 2′ long, forky branched, are set with soft hair, have alternate, compound, ovate obtusely crenate, unequally dentate, smooth, light-green leaves; the yellow flowers stand at the end of the branches on soft haired peduncles. The radical leaves have long petioles; the perennial, cylindric, branched, several-stocked, long-fibrillous root is externally brown-reddish, internally yellowish-white to orange colour. The whole plant yields, when bruised or cut, a yellow milky juice of burning taste.

The root dug in April or May is alone used for essence after Rule 2; it looks beautifully gold yellow and has a nauseous bitter, acrid taste.

CHENOPODIUM.

Gray orach or goosefoot. From Chenopodium Glaucum L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2.) Nat. ord. Chenopodeæ.

This very common plant occurs on rubbish, places where dung is laid, near houses, walls and ditches, containing stagnant filthy water. The stem, 1 to 1½′ high, now erect, now decumbent, is often striped red and white-green, angular and naked; the alternate leaves, run into petioles, are obtuse, naked, above gray-green or blueish, below lighter, as if dusted with meal. The flower-racemes standing in the axils and at the end, consisting of green, densely accumulate flowerets without pedicels.

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At the floweringtime, from July to September, the whole plant, except the root, is prepared for essence after Rule 2.

CHINA.

Cortex Chinæ flavus s. regius s. Calisaya, Quina Calisaya. Yellow Peruvian bark, yellow cinchona bark, Calisaya bark. From Cinchona cordifolia and lancifolia Mut. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. Ord. Rubiaceæ. Göbel I. 7 and 8.

The yellow cinchona occurs in quills and flat pieces; in pieces yet covered with the corky epidermis (*Cort. Chinæ reg. c. epidermide*) and in wholly or partly uncovered pieces (peeled yellow cinchona); its shape is alike different, for quills of $^1/_4$″, thickness by 1″ diameter as well as flat pieces from 1 to 5″ broad and $^1/_4$ to $^3/_4$″ thick are found, which has its reason in the different age of the branches and boughs, from which it is taken. The surface of the quills is generally gray-brown; only seldom such quills are found, as are free from lichens; in many a wax-yellow thallus is perceived, which looks, as if it were molten upon it, and which is to be regarded as a characteristic of the yellow cinchona. The outer rind on the thick barks taken from old boughs is manifold split, coarsely rugged, with deep cross-splits, reaching the sapwood and with longitudinal furrows; it becomes 4 to 6‴ thick. The colour of the sapwood is cinnamonlike with lighter and darker deviations. Odour and taste the wellknown ones of every good sort of cinchona.

We prepare after Rule 1 with *diluted* spirit of wine a tincture of saturated red-brown colour, and powerful, not disagreeable bitter taste.

CHININUM MURIATICUM.

Chininum s. Chinium hydrochloricum s. salitum, Murias s. Hydrochloras chinicus. Muriate or hydrochlorate of Quinia or of Quinine or Quina.

$4^1/_2$ parts of pure muriate of baryta are dissolved in 25 times their quantity of hot distilled water, and to the solution added gradatim 16 parts of dry sulphate of quinia. After the continually stirred mixture has boiled up for some minutes, it is filtered hissing hot and set apart for crystallization. The crystals consist of white needles shining like silk, and have the bitter taste of the quiniasalts. They

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are to be examined whether they contain sulphate of quinia as well as muriate of baryta. All quiniasalts are to be used for triturations.

CHININUM PHOSPHORICUM.

Chinium phosphoricum, Phosphas chinicus. Phosphate of Quinia or Quina.

In any quantity of moderately heated phosphoric acid of the prescribed specific gravity let be dissolved so much pure quinia, as is necessary for its neutralization, which will be as much as half the weight of the acid acted upon. The concentrated liquid is afterwards diluted with double its quantity of hot distilled water, filtered and put aside in a cool place for crystallization. Longer time is necessary for it, before the long, asbestlike crystals are formed, which must be washed and dried between blotting-paper.

CHININUM SULPHURICUM.

Sulphas Chinii s. Quinii, Chinium sulphuricum. Sulphate of Quinia or Quina or Quinine. Crystallised disulphate of Quinia.

This alkaloid is prepared in the largest quantities and best kind in France, especially at Paris, and may be used without hesitation, after previous careful examination on account of its purity *). It forms in tender, white acicular crystals, shining like silk, as light and loose as Magnesia, of strong cinchona taste, which fuse easily when heated and burn completely under access of air. The coal must be dissipated, slowly indeed, but by continuous ignition perfectly. Invariable by pouring sulphuric acid over them, they dissolve with difficulty in cold water, easier in hot, the most easy in spirit of wine.

CHLOROFORM.

Superchloridum formylicum. Chloroform.

Let ten parts of the best dry chlorinated lime be stirred together in a proper distilling-vessel with thirty parts of water, which mixture must not fill up the vessel above two thirds, and

* Ample directions for this are to be found in Geiger's Handb. of Pharm. p. II. and in Dr. Mohr's Comment. to the 6th edit. of the Prussian Pharmacopœia.

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then add one part of strong spirit of wine to the mixture. After having stood well closed 12 to 16 hours it must again be well stirred and hereafter the distillation may be effected with a quick fire and proper cooling.

The production received, is a colourless liquid, separating by itself in two layers of different specific gravity; the one below the intended chloroform, is separated from that above, a mixture of water, alcohol and some chloroform, agitated with so much hydrate of lime as is required for removing the free chlorine contained in it, and then purified by repeated distillation with moderate heat.

It is a colourless, oillike fluid, spec. grav. 1,496, having an agreeable odour like ether which benumbs easily, and a sweetish taste. Dropped upon paper, it passes off quickly and completely without leaving any trace; added to water by drops it must not make it turbid, and not coagulate the white of eggs. If Iodine is added it must not take a wine-red or brown colour, but the colour of the vapours of Iodine, otherwise it contains ether.

A solution in spirit of wine is to be made of it.

CHLORUM.

Acidum muriaticum oxygenatum, Chlorinum, Halogenium, Aqua oxymuriatica s. chlorata, Liquor Chlori. Liquid chlorine, Chlorineliquid, Chlorinated water, Oxymuriatic acid, Hyperoxymuriatic acid.

Chlorine is gaseous, therefore in itself not applicable for medicinal use. The only form fit for that use is the liquid form, obtained by the absorbing of the gas in water.

To produce chlorine gas a small glass alembic is taken the neck of which is half broken off, and the mouth of which must be closed with a wellfitting corkstopper. After having filled the alembic up to the neck with very coarsely powdered oxide of manganese freed from dust, and added so much crude concentrated muriatic acid, that the belly of the alembic may be half-replete with it, the mouth is stopped with the cork, which is perforated for receiving a glass tube, about $^1/_4$" wide and bent in three legs. The chlorine gas escaping through this tube is collected by dipping the end of the tube so deep into a white glass bottle, which is filled up at most to half its height with distilled, quite cold water, that it reaches almost the bottom of the bottle, fit for being closed with a glassstopper. The evolution begins already in the

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cold, but becomes by the mildest warming very copiously and uniformly. For preserving the temperature as low as possible it is necessary to put the receiver into a wide vessel, filled up with the coldest water. As soon as the room left for air in the bottle appears greenish, the evolving-vessel with the glass-tube is taken away from the first receiver and put in a second standing ready, at the same time closing the first bottle with its stopper. Turning the mouth downwards this last bottle is well agitated, that the water may receive the gas floating free in it. The vacuum arisen is afterwards filled with air by cautiously giving vent to the stopper, holding yet the mouth downwards, and the air will intrude lively through the liquid. Meanwhile the second receiver has been filled with chlorinegas likewise, and the above-mentioned manipulation is repeated with it, the gas-evolving-pipe being stuck again into the first bottle. In this way both bottles are filled alternately; and the perfect saturation of the water with chlorine gas is effected through repeated heavy agitation; which may be perceived with certainty by the gas remaining supernatant over the water.

The chlorinated water obtained in this way is clear, of a yellowish-green colour, pungent smell and taste. Let it be distributed in small bottles, having glass-stoppers, to be preserved in a cool, dark place, in an inverted position.

Potentisation can be made only with water.

CICUTA VIROSA.

Herba et radices Cicutæ aquaticæ s. Conii aquatici. Water-hemlock, water cicuta. From Cicuta virosa L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ Brandt et Ratzeb. I. 29. Hayne I. 37. Düsseld. 285.

This perennial plant occurring (but not too frequently) in pools, ponds and deep water-ditches in Europe, has a stem, 2 to 4′ high, erect, branched, smooth; its root-leaves sit on long, hollow petioles, are tripinnate, fallow-green with sharp-serrate segments about 2″ long. The smaller, short petiolate leaves of the stem, are only bipinnately cleft and sit on bellied sheaths. The umbels are flat arched, bearing little white flowers which have many rays. The ovate, below truncate, yellowish-white root, has several heads or stocks and in ringshaped, punctate knots, numerous, fleshy, horizontally distant fibres. Its peculiar character is formed by the cellular hollow spaces showing themselves when cut

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longitudinally, which stand several times repeated one above the other. It yields a light yellow milky juice, becoming darker in the air. Its smell reminds of celery and parsnip.

The root, gathered during summer, before the flowering time, serves for preparing an essence after Rule 2, of a saturated yellow colour, and most nauseous-loathsome odour and taste.

CINA.

Semen Cinæ s. Zedoariæ s. Santonici s. Xantonici s. Contra. Worm-seed, Goosefoot-seed, Worm-seed of Judæa. From Artemisia Vahliana Kost. Artemisia Contra Vahl. Nat. Syst. Syngenesia Polygamia superflua (Cl. XIX. O. 2). Nat. ord. Synantheræ. Düsseld. 230.

It is known, that the drug brought us under the abovestated name does not consist of seed, but of the undevelopped flowers, mixed with the scales of the calyx and the pedicels of different species of the genus *Artemisia.* We prefer the sort brought to us as *Semen Cinæ levanticæ* to all others; it consists of small, ovate-oblong, green-yellow flower-heads, becoming darker and more brownish by age, whose envelop is formed of tight recumbent, ovate, shining scales. They have a peculiar nauseous-aromatic odour which is somewhat like camphor, and rough, loathsome-bitterish taste.

After Rule 1 a tincture is to be prepared, which has a dark-yellow-green colour and the mentioned odour and taste.

CINCHONINUM SULPHURICUM.

Cinchonium sulphuricum, Sulphas cinchonicus. Sulphate of Cinchonia.

Cinchonia is obtained by preparing Quinia; for it crystallizes first out of the extractions of the cinchonabarks (and in greater quantity from those of the brown sorts, than from those of the yellow), which contain both alkaloids at the same time, the Quinia remaining in the mother liquor.

The basic sulphate of Cinchonia is prepared by adding one part of pure concentrated sulphuric acid diluted with equal parts of water, to fifty parts of spirit of wine, and then dissolving eight parts of pure crystallized Cinchonia, in it, heating the mixture to seething. From out of the filtered solution yet seething hot the salt crystal-

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lizes in white pellucent rectangular columns. It comports itself to concentrated sulphuric acid as well as in a red heat like sulphate of Quinia. It is also prepared further in the like manner as this.

CINNABARIS.

Hydrargyrum sulphuratum rubrum, Bisulphuretum Hydrargyri rubrum, Sulphuretum hydrargyricum. Cinnabar, Bisulphuret of Mercury, Vermilion.

For medicinal purposes we only make use of the artificial cinnabar (whether prepared in dry or humid way is quite the same thing), after having been convinced of its being chemically pure. It must be of the known brilliant red colour, and must pass off in vapour perfectly in the heat; neither acids, nor alkalis ought to dissolve part of it; the cinnabar sublimed in compact crystalline masses is always obtained quite pure.

It is used for triturations.

CINNAMOMUM.

Cortex Cinnamomi acuti s. veri, Cinnamomum verum s. zeylanicum, Canella ceylanica. Cinnamon. From Laurus Cinnamomum L. Sex. Syst. Enneandria Monogynia (Cl. IX. O. 1). Nat. ord. Lauraceæ (Laurineæ). Göbel I. 4.

The true Ceylon cinnamon consists of thin, fine, flexible quills or canes, not thicker than royal paper, nearly $1\frac{1}{2}$ yard long; of which 6 to 8 are rolled up in each other. Their outer side is light-brown yellow, and their inner side a little darker, they have a short-fibrous, easy fracture, high agreeable aromatic odour and similar, first sweet, then pungent, not astringent taste.

After Rule 1 we prepare a tincture with *diluted* spirit of wine from it, which has the above-mentioned taste and smell, and a light-red-brown colour. The tincture prepared from cheaper sorts of cinnamon is to be known by a dark-brown colour, weaker odour, and at last a little astringent taste.

CISTUS.

Herba Chamæcisti s. Helianthemi. Holly rose, sea sun-flower. From Cistus canadensis Juss. Cistus Helianthemum L. Sex. Syst, Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Cistineæ,

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A small, elegant plant, growing everywhere in sunny places, on dry pasture-grounds and stony slopes of hills, having stems as long as a hand to a foot, mostly decumbent, the fore-part ascendent, set with hair; the leaves opposite, short-petiolate, small, above a little set with hair, shining green, below whitish, at the margin a little rolled down. At the end of the branches stand the conspicuous flowers, 3 to 6, upon thin, haired peduncles, in quinque partite, retrorse, haired calices, containing five large, beautiful gold-yellow petals.

In May to Juli, gathered during the flowering time, the whole plant without the root is prepared for tincture after Rule 3, which is of a green-brown colour.

CLEMATIS.

Herba Flammulæ Jovis s. Clematitis rectæ. Upright virgin's bower. From Clematis erecta L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7). Nat. ord. Ranunculaceæ. Hayne XII. 30. Düsseld. 390.

In central and southern Europe this plant is to be found on sunny hills, in bushes, and on the side of forests. The stem, 3 to 4′ high, erect, hollow, striped, and smooth, has pinnate-cleft leaves, the incisions of which on the base are cordate or ovate, pointed and entire. Flowers, multipartite cymes, the sepals oblong-spatulate, naked, having at the margin on the outer side hair like downs; petals white four-petaled. The fresh plan has a pungent acridness, irritating the nose, and blisters the tongue, when chewed.

Gathered in the flowering-time, from June to August, it is prepared after Rule 3 for tincture, which is preferable to the essence and has a darkbrown-green colour and acrid taste.

COCCIONELLA.

Ladybird, Sun-chafer. From Coccionella septempunctata (Cl. V. O. 1) Coleoptera. Brandt and Ratzeb. II. 20.

A very wel! known and widely spread insect, frequently to be found in Germany, the most frequently in England, living on vegetables in gardens and fields, cornfields and especially upon the deflorate heads of the common field-thistle (*Cnicus arvensis*). Head and thorax are black, flat, underbody and feet black, wing-shells

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arched, oval, red or orange-yellow, with (commonly 7) black dots, of unequal size, the wings nearly as long again as the body. When touched with the hand there issues from the joints of the feet a thickish juice, yellow like cambogia.

The fresh caught insects after being bruised in a porcelain mortar, are extracted for tincture after Rule 1 with strong spirit of wine. The tincture is of a reddish-yellow colour.

The best way of gathering these insects is, to put them immediately in a glass containing two drachms of strong alcohol; not only they are speedily killed in it, but also the juice of the joints, in which especially their efficacy seems to consist, is thus kept undimished, the same alcohol being used for preparing the tincture.

COCCULUS.

Semen Cocculi indici s. levantici, Baccæ levantinæ s. orientales. India berries. From Menispermum cocculus L. Sex. Syst. Diœcia Dodecandria (Cl. XXII. O. 10). Nat. ord. Menispermeæ.

The ripe, dried, round, berrylike fruit, as large as laurel berries, bought from druggists, consist of a thin, black-brown, brittle, outer rind, of a tight-joined yellowish-white kernel-rind and of a dirty-yellow, hornlike-translucent, oily, round kernel, having a most disgusting and bitter taste, quite without smell.

We prepare from the unpeeled berries, which have been opened previously for the necessary picking out of the old and ineffacatious, a tincture after Rule 1, of a brownish-straw-yellow colour, from which at a temperature below the freezing-point margarine acid in small groups of verrucose little lumps are deposited on the sides of the glass. Without loss regarding the efficacy we separate the tincture by filtering during cold weather from it and clean the vessel from this fat.

COCCUS CACTI.

Grana Coccinellæ, Cochinella, Cochinilla, Coccinilla. Cochineal. From Coccus Cacti. L. Insect. Fam. Gallinsecta (Hemiptera).

This insect is especially indigenous to the Mexican provinces of America, where it is reared expressly in plantations upon different species of cactus.

We get it in a dry state from druggists and above all must

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see that no mechanical adulteration, or (as sometimes occurred) artificial imitations made from quite strange substances, are mixed with it; which are perceived best through a magnifying-glass. The best sort under the name of *Cochenille mestique, Grana fina s. mutica*, is externally shining black or silvergray (as if it were covered with dust), consisting of partly angular grains with cross-wrinkles, not too small, inodorous and tasteless, in which the shape of the animal is easily perceived.

A tincture is to be prepared from it after Rule 1, which has a fine purple colour, no smell and little taste.

COFFEA.

Fabæ arabicæ s. levantinæ. Mocha Coffee, Arabian Coffee. From Coffea arabica L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Rubiaceæ.

This well known, universally spread, and important article of trade requires no particular description. For medicinal use we select the sort sold under the surname Levantic (Mocha beans), consisting of small, more roundish than flat, not very dark yellowish-gray-green beans, and has a peculiar strong smell of Coffee. After having been dried with moderate heat, it is reduced to a subtle powder, and extracted for tincture with *diluted* spirit of wine after Rule 1. It has a yellow-brown appearance, the peculiar smell of unroasted coffee and becomes no more turbid, if cleared by several weeks' standing.

COLCHICUM.

Radices s. Bulbi et Semina Colchici. Meadow saffron. From Colchicum autumnale L. Sex. Syst. Hexandria Trigynia. (Cl. VI. O. 3). Nat. ord. Colchiceæ (Melanthaceæ). Brandt and Ratzeb. I. 4. Hayne V. 45. Düsseld. 49.

This well known, perennial bulbous plant spread over all Europe, especially not seldom covering wholly sour and moist meadows, sprouts forth in autumn on one (sometimes two) 3 to 4" long, white, hollow scape, six-partite, lilac-coloured flowers, having no calyx; the three broad-lanceolate, stiff, smooth, somewhat fleshy leaves develop themselves in the following spring and surround the very short-petiolate, large, obtusely three-edged, blown up seed-capsule, which, when ripe (in May), contains in three cells the

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roundish, brown, internally white, hard seeds, of the size of those of millet.

On account of the more uniform and greater efficacy, we prefer the ripe seeds to the cormus, and prepare from them (with *diluted* spirit of wine) a tincture after Rule 1, which has a yellow colour und a nauseous-bitter taste.

When on express demand the cormuses shall be applied, these are to be gathered during the flowering time (after *Geiger* in June and July: but then it is difficult to find them), and must be prepared immediately fresh for essence after Rule 2. *

COLOCYNTHIS.

Fructus s. pomæ Colocynthidis. Colocynth, bitter cucumber. From Cucumis Colocynthis L. Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Cucurbitaceæ. Düsseld. 268.

The fruit, freed from the outer yellow rind, dried, for the most part as round as a ball, contain a loose, spongy, whitish, inodorous marrow, of an extremely bitter taste which lasts long; between it, in a double row, in carpels, very many oval, rounded smooth seeds, 2‴ long and 1½‴ broad.

The greater specimens are to be selected, the seeds to be removed, and then the dry pulp duly comminuted; a tincture after Rule 1 is to be prepared from them, which has a dark-straw-yellow colour and very bitter taste.

COLUMBO.

Colombo root. From Menispermum palmatum L. Sex. Syst. Diœcia Dodecandria (Cl. XXII. O. 10.) Nat. ord. Menispermeæ. Göbel II. 5. Düsseld. Suppl. 104.

This drug, coming from Africa, consists of slices 1 to 3″ broad, and 2 to 8‴ thick, with undulated margins, somewhat raised towards the inner marrowy substance; there are also irregular longitudinal pieces mingled with it, forming half or entirely a cylinder, having a diameter of ¾ to 1½″, and 2″ in length. The

* For obviating uncertainties and want of uniformity there must be fixed that under the simple term "*Colchicum*" always the tincture made of *seeds* is to be understood, but the essence prepared from the *cormus* is to be distinguished by the addition of "*e radice*".

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outer side has a wrinkled, striped or furrowed and a very thin epidermis of dirty reddish-brown colour; below which there is found a resinous layer of yellowish- or blackish-green colour, 1/4 to 1/2" thick, clearly to be seen, when such a piece is cut across; on the flat surrounded by it, several concentric circles of different hue are visible. All pieces are not seldom covered with a powdery yellow-greenish dust, like Rhubarb, occasioned by friction. It is compact, heavy, not easily friable, of weak aromatic, nauseous odour and lasting bitter, at the same time mucous taste.

Beware of mistaking it for a false Colombo (coming from *Fraseria caroliniana*); this is distinguished from it by having not alone a much weaker taste, but also has, when cut across, only two clearly different substances, rind and medullary layer, whereas the true colombo consists of 3 to 4 layers, clearly separated.

After Rule 1 with *diluted* spirit a tincture is prepared, being of quince-yellow colour and very bitter taste.

CONIUM.

Herba Cicutæ majoris s. terrestris s. maculatæ, Herba Conii maculati. Hemlock, spotted hemlock. From Conium maculatum L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Brdt. and Ratzeb. I. 25. Hayne I. 31. Düsseld. 282.

This biennial plant spread all over Europe, growing on heaps of rubbish, waste places, near hedges and in neglected gardens, has a spindle-shaped, white root, from which arises the stem, 3 to 5' high, erect, below often as thick as a finger, hollow, round, quite smooth, distinguishing itself by many red-brown spots and a blue rime, which is as it were breathed over it. The leaves near the root have thick hollow petioles and are tripinnate, having ovate-oblong, deep-laciniate leaflets; the leaves of the stem are less compound, being sessile or provided with narrow sheathes, membraneous at the margin; both with prominent midrib; the umbels standing in the axils and at the end are petiolate, flat, with involucres bent backwards, having many leaflets; flowers white and small. The whole plant is quite smooth and of a disagreeable smell, very like mice-urine, by which it distinguishes itself essentially from most umbellate plants similar to it. Compare *Æthusa Cynapium.*

We gather the plant in full sap, the root excepted, from July to August, when upon the point of flowering, and prepare from

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it an essence after Rule 2 which is of light-brown-green colour and most disgreeable narcotic odour.

COPAIVA.

Balsamus Copaivæ s. Copahu, de Cobaiba s. brasiliensis. Copaiba or Capivi balsam, white Peruvian balsam. From Copaifera officinalis and many other Copaiferæ. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Leguminosæ.

The Copaiba sold under the name of Brazilian Copaiba, which is not too thick, oily, not tough, of pale yellow, quite clear colour, has no disagreeable aromatic odour, and oily mild, afterwards sharp bitterish taste, is the best sort.

It dissolves perfectly clear in its third part of pure ammonia and leaves (when not adulterated with an expressed oil), after being boiled for 5 to 6 hours with water in an open vessel, a brittle, fragile resin.

We prepare from it in the known proportion a solution with *strong* alcohol, which must be perfectly clear and is of a pale straw-yellow colour.

CORALLIUM.

Corallia rubra, Corallum rubrum. Red Coral. From Isis nobilis L. Cl. Polyp. O. Corall.

The fragments of the thinnest branches of this Zoophyte occurring in commerce as a drug are of the thickness of a dove-feather, ½ to 1½″ long, inarticulate, manifold branched, slightly striped, of beautiful blood-red colour, covered with a white lime-like hue, wholly inodorous, of weak lime-taste.

They are repeatedly washed with water, reduced to the most subtle powder and then used for triturations.

COTYLEDON.

Herba Umbilici Veneris s. Cotyledonis. Venus' navelwort. From Cotyledon umbilicus L. Sex. Syst. Decandria Pentagynia (Cl. X. O. 5). Nat. ord. Crassulaceæ.

A perennial little plant indigenous to Southern Europe and England, with a tuberous root, and ½ to 1′ high, red, foliated stem. The leaves are succulent, 1 to 1½″ long, at the base ag-

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gregate, long-petiolate, hollow like caps, repand-dentated, above lessening, nearly apetiolate, reniform, blue-green. The small yellowish-green flowers hang numerous in a paniculated raceme, crowded together and consist of a quinquepartite calyx, with tubular quinquepartite corolla.

After Rule 2 during the flowering time in the month of June an essence is to be prepared from it.

CROCUS.

Crocus orientalis s. de Gatinois s. Austriacus, stigmata s. flores Croci. The Saffron Crocus, Saffron. From Crocus sativus L. Sex. Syst. Triandria Monogynia (Cl. III. O. 1). Nat. ord. Iridaceæ. Hayne VI. 25. Düsseld. 58.

The best saffron occurring in trade consists of the stigmata and styles of the flowers bent and twisted in many ways, being one inch long and cuneiform, skinny, obtuse at the thicker end, tristigmatised, dark-red or red-yellow, shining like fat, at the thin end white-yellowish, light and elastic. Saliva, water and spirit are coloured by it dark gold-yellow; the smell is peculiarly aromatic somewhat narcotic, the taste balsamic. Adulteration by mingling it with other yellow flowers is best found out by soaking with water and afterwards spreading and inspecting the single stigmata.

We prepare from it after Rule 1 a tincture with *diluted* spirit of wine, which has a deep gold-yellow colour and specific, strong smell and taste of saffron, and is still coloured after having been diluted ten thousand times.

CROTON.

Grana Tillii s. Tiglii, Semen Cataputiæ minoris, Nuces cathartiæ americanæ. Purging Croton. From Croton Tiglium. L. Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Euphorbiaceæ.

The grains brought for sale from the Indies are ovate-oblong, at both ends obtuse, 3 to 4‴ long and 2 to 2½‴ thick, having a suture a little prominent; under the thin, brownish-yellow, somewhat darkspotted, brittle rind a yellowish-white, inodorous kernel is to be found, of a taste in the beginning mild oily, but soon afterwards burning acrid, causing heavy roughness and inflammation of the throat.

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A tincture is prepared from them after Rule 1, having brown-yellowish colour and burning taste. *

CUBEBA.

Cubebæ Baccæ s. semen Cubebarum, Piper caudatum. Cubebs, Cubebpepper. From Piper Cubeba L. Sex. Syst. Diandria Trigynia (Cl. II. O. 3). Nat. ord. Urticeæ.

The fruit occurring in trade under the above-mentioned name, being globulate and having a stalk, are the unripe berries of a bush indigenous to the East Indies. They are as big as middling peas, have a blackbrown, rough skin, covered with something like gray rime, and in it a kernel of the same colour; the first is of an agreeable aromatic smell, but of little taste; but the latter has a bitterish, acrid, pepperlike taste. The stalk cannot be broken off from the skin without injuring it.

The tincture prepared after Rule 1 has a lightbrownish colour and odour and taste of the berries.

CUPRUM.

Venus Cuprum purum s. metallicum. Copper, pure or metallic copper.

One part of purified sulphate of copper (q. v.) is dissolved in about thirty times as much of distilled water; the solution is poured into a flat porcelain dish, wide enough, that it is not replete higher than some inches, and then several little iron bars about $^1/_4$" thick, free from rust, are put in. The decomposition will ensue immediately, some copper being precipitated first as a smooth cover, afterwards as a very fine powder, upon the surface of the iron. To get this powder as fine as possible, it is necessary not to leave the deposition to itself, but to separate the precipitate by scraping it off the bars with a wooden spatula; the precipitate then falls down and makes room for other deposits. By this the formation of larger lamels, is prevented, which are not quite fit for trituration, on account of their being divided with difficulty.

* If instead of the tincture made from the grains, the expressed oil of them is to be administered, this must be dissolved in strong alcohol (alcohol fortius) in the decimal proportion, for triturations with sugar of milk are inadmissible, because they become rancid soon enough.

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As soon as the decomposition is finished *, the solution, now converted into a solution of sulphate of iron, is to be poured off, the precipitate obtained is washed repeatedly with distilled water, till this flows off quite pure. Now it is put in a glass fit for being closed tightly, and poured over with a watery solution of hyposulphite of soda, and agitated often for 5 to 10 minutes; the precipitate obtains by this the true redbrown copper-colour, the darkbrown suboxidule becoming reduced. After having removed also this solution by careful repeated washing, the precipitate is collected upon a filter and freed from the adherent moisture by slightly pressing it between several layers of bibulous paper, of which often new ones are to be used; afterwards it is washed repeatedly with strong alcohol and completely dried by triturating it in a wellwarmed porcelain mortar. Thus prepared it is a tender lustreless powder, of a copper-brown or light-chocolate-brown colour, which gets under the burnishing steel immediately the finest metallic splendour.

Triturations are made from it, the first of which has a blue-gray colour.

CUPRUM ACETICUM.

Flores viridis æris, Ærugo crystallisata, Acetas cupricus, Acetas Oxydi Cupri. Acetate of copper, neutral or crystallized acetate of copper, Crystals of verdigris.

The neutral acetate of copper is obtained by dissolving common emtitious verdigris (*viride æris in glebis*) to saturation in distilled vinegar.

The filtered liquid is set asside for crystallization and the crystals obtained being rhombic prisms of saturated dark green colour, are washed with diluted spirit of wine, speedily dried between bibulous paper and preserved in a vessel well to be closed, because they decompose in the air and become by this partly indissolvable.

For medicinal use we prepare of it a solution, but which must not contain more than five per cent, or also crystals will be separated subsequently.

* Care is to be taken, not to make use of the solution till all the copper is precipitated, or else the precipitate may easily become adulterated with iron.

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CUPRUM ARSENICOSUM.

Arseniate of copper. Scheele's Green.

This is prepared by boiling three parts of powdered white arsenic, with eight parts of caustic potash dissolved in sixteen parts of water, till arsenic begins to be separated in the form of a powder. Under continuous stirring this liquid is poured into a hot solution of eight parts of sulphate of copper made with forty eight parts of water, the precipitate well washed and dried with very gentle warmth. It is of a grass green colour.

Triturations are made of it.

CUPRUM CARBONICUM.

Carbonas cupricus. Carbonate of copper.

This is obtained by decomposition of a solution of pure sulphate of copper in thirty times as much distilled water, effected by carbonate of soda in the cold. The beautiful sky-blue, loose precipitate is washed as often as is necessary for removing the sulphate of soda. Collected upon the filter and dried with a gentle heat, it is a loose pale-greenish-blue powder, to be used for triturations.

CUPRUM SULPHURICUM.

Vitriolum de Cypro s. cæruleum s. Cupri s. Veneris. Sulphas cupricus, Deutosulphas Cupri cum aqua. Sulphate of copper, blue vitriol, vitriol of copper, formerly called Roman vitriol.

The blue vitriol of commerce contains commonly iron and zinc; it is purified from it, by leaving a solution of it prepared with five times as much water for sometime (for weeks) in contact with a strip of polished copper; the iron falls down gradually in the form of yellow oxide, is separated by straining and the fluid brought to crystallization. Only the first crystals shooting on can be used for medicinal purposes, because the existing proportion of sulphate of zinc remain in the mother liquor and would crystallize only after further inspissation along with it. The azure crystals, are right rhombic prisms and inequal hexaedrons, must be protected against the access of air; and a solution is to be made of them in the common decimal proportion.

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CYCLAMEN.

Radices Cyclaminis s. Arthanitæ s. panis porcinæ. Sow-bread, hog's-bread, Cyclamen root. From Cyclamen europæum — L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Primulaceæ. Brdt. and Ratzeb. I. 11. Hayne XIII. 8. Göbel II. 21. *

This plant grows in shady forests of leaved wood upon not too high mountains and fore-alps of South-Europe, Switzerland, Austria, Bohemia and Moravia. The perennial root consists of a round, flat-pressed, externally brown, internally white tuber, of rather dry, inodorous flesh, 1 to 2 ounces in weight, on the base set around with many thin, long fibres. It brings forth directly its long-petiolate, roundish, veined, above shining darkgreen, white spotted, below purple or rosy leaves, as well as the uniflorous flowerscapes with pendulous rose-coloured (or white), sweetscented flowers, without a stem.

The roots fresh gathered during autumn before the second flower, are prepared for tincture after Rule 3, which has a brownish colour, no odour and a somewhat acrimonious nauseous taste.

CYPRINUS.

Common barb or barbel. Cyprinus Barbus L. Cl. IV. O. 2. Cyprinoida.

A well-tasted fish, occurring frequently in the German rivers, 1 to 3′ long, with a long, pointed head, projecting upper jaw and the mouth standing downwards, set with long, fleshy barbs (a characteristic); back and sides olivegreen, belly white.

In the month of May at which time the spawn of these fish is believed to be poisonous, it is to be taken out and prepared for tincture after the same prescription, which has been given under the head *Cancer fluv.* It is of a straw-yellow colour and the peculiar smell of fish.

DICTAMNUS.

Radices Dictamni s. Diptamni albi s. Fraxinellæ s. Fraxini pumili. White or bastard dittany, Fraxinella. From Dictamnus

* This illustration representing (dry) roots deviates strikingly from the shape of the fresh roots, which we have always found to be that of compressed balls, never turnip-shaped.

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albus L. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Rutaceæ. Hayne VI. 7. Düsseld. 379. Göbel II. 28.

This beautiful plant is indigenous to Central and Southern Europe; it is often reared as an ornamental plant in our pleasure-gardens. The long, fleshy, white, branchy-curved root is from the thickness of a quill to that of a thin finger, the middle is somewhat ligneous; it has a bitter-acrid, aromatic taste and its strong smell resembles that which is called goatish. It sprouts forth a stem 2—4′ high, being simple, round, straight, covered especially above with viscous glands. The unequally-pinnate leaves with apetiolate, ovate, pointed leaflets stand alternate; the flowers form at the end a conspicuous raceme; the calyx is reddish-green, set with purple, resinous hairs, the flower is large, five-petaled pale-red with purple coloured veins, or else quite milk-white; the whole plant has a strong balsamic odour.

The root taken out fresh during the flowering time in the month of June or July (from the thicker pieces only the rind) is prepared for tincture after Rule 3, having a straw-yellow colour and the odour of the root pretty strong.

DIGITALIS.

Herba s. Folia Digitalis purpureæ s. Virgæ regiæ. Purple fox-glove. From Digitalis purpurea L. Sex. Syst. Didynamia Angiospermia (Cl. XIV. O. 2). Nat. ord. Scrophulariaceæ. Brandt and Ratzeb. I. 12. Hayne I. 45. Düsseld. 154.

This plant spread all over the mountain districts of Germany, occurs also frequently in France and Switzerland; it flourishes especially on dry, stony, but wooded slopes.

From the rather thick and ramose root shoots the stem, 2—6′ high, often as thick a as finger, which is straight, round, and set with leaves. The root-leaves are large, ovate-lanceolate, obtuse-crenate, the middle vein thick, running out in a canaliculate, fleshy petiole. The leaves of the stem are mostly sessile, all netlike veined and soft. The flowers, crowded along one side of the stem in a raceme not seldom one foot long, are pendulous, campanulate, 1 to 2″ long, light- or dark-purple-coloured, internally, on the lower side, white spotted, with dark points.

From the leaves gathered at the commencement of the flowers (in June till July) on dry days, only from plants grown wild, an

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essence is to be prepared after Rule 2. It is of a dark brown-green colour and nauseous, slightly narcotic odour.

DROSERA.

Herba Rorellæ s. Roris Solis. Sundew, youth-wort, lust-wort, moor-grass. From Drosera rotundifolia L. Sex. Syst. Pentandria Pentagynia (Cl. V. O. 5). Nat. ord. Droseraceæ. Hayne III. 7.

This small, tender plant is found in Central and Northern Europe, in Asia and America, on turf-moors, swamps, and marshy meadows among moss. The little leaves, clustered like rosettes around the flowerstalk, are long-petiolate, circular or reniform, cuneiformly running into the petiole, 3 to 4‴ broad ½ to 1″ long, somewhat juicy, set at the margin with bristly hairs, which stand off like fringe, being long, purple-coloured, as if they were bedewed. The small white flowers form on short peduncles a one-sided, paucifloroous, above curved raceme.

The whole plant, flowering in July and August, is prepared for tincture after Rule 3, having a saturated yellow-red-brown colour, little taste and no smell. It is more liable to be spoiled than others and therefore especially to be protected from sun-light.

DULCAMARA.

Stipites s. lignum (also falsely *Radices*) *Dulcamaræ s. Amaradulcis.* Woody Nightshade. Bitter-sweet. From Solanum Dulcamara L. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solaneæ. Hayne II. 39. Düsseld. 188.

This plant, spread over all Europe, flourishes in moist, shaded places near the banks of ponds, ditches and rivers, and along hedge-rows. The woody, creeping root, sprouts forth a running stalk, which climbs still on the trees. The petiolate, alternating leaves are ovate, pointed, darkgreen, smooth; the flowers standing opposite to them form decumbent, bipartite cymes, having violet petals and orange anthers.

The green stalks collected in the months of April or October, which are flexible, covered with a gray skin, smell strong of cats' urine when rubbed, and must not be ligneous. They are prepared for tincture after Rule 3. It is of a darkbrownish-green colour and bittersweet taste.

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ELATERIUM.

Fructus Elaterii s. Momordicæ, Cucumis asininus s. agrestis. Squirting cucumber. From Momordica Elaterium L. Sex. Syst. Monœcia Syngenesia (Cl. XXI. O. 6). Nat. ord. Cucurbitaceæ. Hayne VIII. 45.

This plant is indigenous to Southern Europe, but may be cultivated also in our gardens. The stalk which is 2 to 5′ long, branched, creeping on the earth on all sides, is rough-setaceous and very juicy. The leaves are alternate on long, thick, bristly petioles; they are triangulate-cordate, above dark, dirty green, below lighter gray-green. The male flowers appear in July in very long-pedunculate loose corymbs, on which the single short-petiolate female flowers sit in the axils: they are of a pale yellow colour.

The yellowish-green, fleshy fruit, which is 1″ thick and 2 to 3″ long is elliptic obtuse rounded, very rough-setaceous and fleshy. It contains a whitish, mucous juice, which it spirts out, along with the brown, smooth seeds, with great force and very far, at the slightest touch, falling off from the stalk.

At this time, in August and September, we collect this fruit to prepare from it an essence after Rule 2.

EUGENIA.

Jambos-Myrtle, common Jambos tree. From Eugenia Jambos L. Sex. Syst. Icosandria Monogynia (Cl. XII O. 1). Nat. ord. Myrtaceæ.

A conspicuous tree, pretty indigenous to the East- and West-Indies *, and cultivated, having petiolate, lanceolate, deep five to seven-partite, smooth, shining leaves, and loose flower racemes, standing at the end, with large, whitish flowers, and pear-shaped fruit, white and red coloured, or yellowish, smelling agreeably like roses, and being well-tasted, which are used like our fruitkinds. According to Dr. *Hering's* prescription the ripe kernels are applied for tincture.

* Though it is found in the botanical gardens of Europe, it will not bear fruit there, wherefore we must either content ourselves with the young twigs of this plant, which we prepare after Rule 3, or by the tincture prepared from the ripe seeds on the spot by a trustful agent.

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EUPHORBIUM.

Gummi-Resina s. Gummi Euphorbii. Euphorbium. From different Euphorbiaceæ, especially Euphorbia officinarum, E. antiquorum and E. canariensis L. Sex. Syst. Dodecandria Trigynia (Cl. XI. O. 3). Nat. ord. Euphorbiaceæ.

A milky juice, related to gummi-resin, exuded and obdurate after incisions made into the rind, in pieces of an irregular form, dirty-yellowish or brownish, impellucid, friable, from the size of a pea to that of a bean, found to contain little thorns or little cavities at their place, sometimes also small trilocular seed-capsules. Inodorous, of burning sharp, lasting taste; in the heat it melts developping an agreeable smell and burns with light, white flame. Its dust causes heavy, incessant sneezing, and provokes tears.

After Rule 1 we prepare a tincture, having a brownish-yellow colour and the burning taste of the substance.

EUPHRASIA.

Herba Euphrasiæ. Eyebright, Euphrasy. From Euphrasia officinalis L. Didynamia Angiospermia (Cl. XIV. O. 2). Nat. ord. Rhinanthaceæ. Hayne IX. 8.

The small annual plant spread over all Germany, is frequently found on meadows, dry pasture-grounds, grassy slopes and in clear forests. The stem, 5 to 12″ high, branched on the base, often quite single, has small ovate, sharp-serrate, darkgreen, somewhat stiff, clasping leaves. The small flowers, are without peduncle, milkwhite, violet-red veined, at the bottom yellow, and sit, turned to one side, in the axils.

In the flowering-time, during July and August, the whole plant, is gathered especially from poor, sunny places and omitting the root, prepared for tincture after Rule 3, which is of dark-yellow-brown colour and slight smell of the herb; it contains remarkably much tannin making oxides of iron green.

EVONYMUS.

Semen s. fructus Evonymi. Spindle-tree, priests' cap, prickwood. From Evonymus Europæus L. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Celastrineæ.

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The common spindle-tree is a bush occurring everywhere in Europe in hedges and bushes, becoming sometimes as large as a tree. It has lanceolate, at the margin crenate leaves and small pale-green, racemelike, fourpetaled flowers, sitting on forky-partite peduncles. The fleshy seed-capsule, rose-coloured when ripe, mostly quadrilocular, contains as many roundish, saffron-yellow seeds, of a disagreeable smell and bitter taste.

The seed ripening in September with the capsules, are prepared for tincture after Rule 3. It has a saffron-yellow colour, no odour and nauseous bitter taste.

FERRUM.

Ferrum metallicum s. purum, Mars. Pure Iron (its preparations were called in olden times Chalybs or steel).

A piece of the softest and purest forged iron, free from rust, is worked with a very sharp and very fine file; the filings falling down, being like dust, are collected upon a sheet of paper, and after having been separated from the coarser parts by sifting through a piece of fine linen, the tender powder is preserved dry in small and well-stoppered glasses, previously sharp dried, which must be replete with it entirely.

The extremely fine milled iron powder, being now an article of commerce and quite free from rust, may be applied, after having been convinced from its being chemically pure by previous examination. In triturating it, care is to be taken, that not only the mortar and pestle, but also the sugar of milk be previously warmed, for preventing all moisture. This labour also above all must be continued without interruption, the attractive power of the iron for oxygen being continually active and causing oxydation.

FERRUM ACETICUM,

Ferrum oxydatum aceticum, Acetas ferricus, Acetas oxydi ferri. Acetate of iron.

One part of the solution of chloride of iron prepared after our prescription is diluted with twelve times as much distilled water and afterwards decomposed by adding one and a half to two parts (or as much as is necessary for excess) of liquid caustic ammoniac. The precipitate got, being oxide of iron is collected on

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linen, repeatedly well washed and then freed from the water as well as possible by pressing.

Let four to four and a half parts of this nearly dry mass be poured over in a bottle with seven parts pure concentrated vinegar and the dissolution be aided by vigorous agitating, till only a small rest of the iron remains undissolved. The filtered liquid is brought to a specific gravity of 1,14, and then either

a) one part of it is mixed with one part and a half of *diluted* spirit of wine, and used as *Tinctura ferri acetici* or

b) it is cautiously evaporated in a vapourbath till it becomes dry and preserved in well-stoppered glasses for trituration. *

FERRUM CARBONICUM.

Crocus martis aperitivus Stahlii, Ferrum subcarbonicum, Ferrum oxydatum s. oxydulatum fuscum s. carbonicum, Hydras ferricus, Carbonas ferricus, Oxydum ferricum cum aqua. Opening crocus of Iron, Protocarbonate of Iron, Carbonate of Iron, Hydrated carbonate of Iron.

A solution of 17 parts of crystallized carbonate of Soda with four times as much of water is strained through linen and heated to boiling in a cast iron boiler. Then let 10 parts of pure crystallized sulphate of iron be put by degrees in the boiling solution, waiting everytime for the ceasing of the effervescence. The white or greenish-white precipitate thrown down, being proto-carbonate of iron is put into a filtering bag and speedily washed with boiling water. As soon as the water running off shows not more sensibly reaction upon salts of Baryta, let the water run off entirely and the precipitate in the bag be freed from the adhering water by pressing with the hands in so far, that at last it bears the application of a screw-press.

The precipitate still moist may be filled into a hog's bladder, which is previously well cleaned, and now exposed, fastly closed by tying, to a temperature of + 15 to 20° R. till the contents appear completely dry.

In this manner a protocarbonate of iron is got, as free as

* Iron salts in general being liable to decomposition, this is especially the case with the acetate of iron. Therefore we recommend not only cautious treatment during the evaporation, but also not to have the attenuation of the tincture in store; the best form is, to administer the tincture by drops mixed with water, every time fresh mixed.

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possible from oxide, of a green-brownish or gray colour, the quantity of carbonic acid it contains indeed decreases in time, even when best preserved, wherefore it is to be prepared anew every year. *

FERRUM IODATUM.

Iodetum ferrosum. Iodide of Iron.

Half an ounce of Iodine and two drachms of rustfree filings of iron are poured over with two ounces of water in a proper cast-iron vessel and left standing well covered for some time till, if necessary with the aid of warmth, the formation and solution of the iodide of iron is completed.

Let the green liquid be speedily filtered, the filtration washed a little and added to it one ounce and a half of powdered sugar of milk, after which the whole is inspissated in a porcelain dish with sufficient heat to the consistency of a mass for pills under continual stirring with an iron spatula. The dark gray-green mass is then spread upon flat vessels in layers as thin as possible or in little clods, for being exsiccated completely in a drying-press; after which it is preserved in well closed vessels.

Triturations are to be made of it, the first of which is to be prepared with equal parts of sugar of milk, to adhere to the usual decimal proportion.

FERRUM LACTICUM.

Lactas ferrosus s. Oxyduli Ferri. Lactate of Iron.

This preparation is best made by decomposing protochloride of iron with lactate of lime; the latter is prepared in the following way: —

In an earthen vessel a solution of 8 ounces of sugar of milk in four quarts of water and one quart of thin cow-milk, mixed with $6\frac{1}{2}$ ounces of powdered chalk is put to fermentation at +20 to 25° R., which begins after 24 hours and finishes within 11 to 12 days, during which time it is to be stirred very often. Hereupon the liquid is heated slowly to boiling in a boiler, constantly stirring, and continued so, till all casein is curdled. It is now allowed to settle,

* Care especially is to be taken applying very dry sugar of milk, and to have the condition of the air in the laboratory very dry.

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the supernatant buttery parts are taken off, the liquid is filtered through wool, and the residue washed with some hot water.

The filtration by slow evaporation to one third yields the lactate of lime in masses, which are pressed out, comminuted into pieces and perfectly exsiccated. The mother liquor will furnish a second portion by further concentrating it. A white granular crystalline powder is got, which is easily soluble in water.

From this lactate of lime 2,1 parts are dissolved in three times as much water, and decomposed by 7 parts of a solution of chloride of iron, being of a specific gravity of 1,25 (prepared after the description given under the head *Ferrum muriaticum,* though of course the addition of muriatic and nitric acid afterwards to be put to, stated there, must be omitted). The lactate of iron after a longer rest separates in the form of a pale-greenish crystalline powder; it is collected upon a filter, washed with spirit of wine and dried with moderate heat, also well preserved from access of air. It serves for triturations.

FERRUM MAGNETICUM.

Lapis magneticus. Natural loadstone, black (deut)oxide of Iron.

This mineral is a darkgrey iron-ore, a combination of oxid and oxidule of iron having the property of attracting metallic iron. It is to be found in primitive rock, in Gneiss, Mica (Glimmer), Chloriteslate, also in Serpentine stone and the Fletz-trap-formation. The greater quantity and the purest is found in Sweden and Norway, but also Saxony, Bohemia, the Hartz mountain, England and Sibiria furnish it.

It is of crystalline-acicular as well as of laminate texture, iron-gray , dimly-shining colour, and considerable weight.

Select only the purely gray, shining pieces, freed from the outer rusty rind for triturations.

FERRUM MURIATICUM.

Sal martis liquidum, Oleum martis, Liquor ferri muriatici, Ferrum muriaticum oxydatum, Bichloretum Ferri, Liquor subbichloreti ferri, Liquor ferri sesquichlorati. Red muriate of Iron Hydrated protochloride of Iron, Quater hydrated protochloride of Iron. Liquid sesqui-chloride of Iron.

Dissolve iron filings in pure undiluted muriatic acid with the

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aid of warmth, at last by boiling, and filter the solution into a very roomy porcelain dish. Then add half as much muriatic acid, as the first taken, heat the liquid strongly, and drop in fuming nitric acid. It will now turn into olive-green, at last dark brown-green. The nitric acid must be added in very small portions, because the previously fixed nitrous gas, gets free along with the just now formed gas at the end, and causes the effervescent liquid to ascend over even a very large vessel. The brown-green colour is at the same time changed into a deep yellow. The liquid is now evaporated under constant stirring in a watersteam bath, till it has got a thickish consistency and then set aside well covered for crystallization. The crystals obtained at the end of the crystallization, are taken from the mother liquor, well dropped off, and then immediately preserved in a glass having a wide neck and glass-stopper. It is a deep yellow salt, crystallized in crust- and wartlike aggregations, very easy deliquescent, and dissolvable in water, spirit and ether.

For making a preparation we dissolve 1 part in 9 parts *diluted* spirit of wine and term the solution having a specific gravity of 1,11 with the name *Tinctura Ferri muriatici.* *

FERRUM SULPHURICUM.

Vitriolum Martis s. viride, Sal Martis, Ferrum sulphuricum oxydulatum, Sulphas oxyduli ferri, Sulphas ferrosus cum Aqua. Vitriol of iron, salt of steel, Copperas, green vitriol, sulphate of iron, proto-sulphate of iron.

In common sulphuric acid, diluted with four times its weight of water, as much of iron wire, nails, or turnings is dissolved as is necessary for perfect saturation of the acid, even when heated.

After having freed the liquid by filtration from the sediment, it is again slightly acidulated with a small quantity of sulphuric acid, and evaporated in a porcelain dish to the point of crystallization.

The beautifully emerald-green crystals got, are collected upon the filter, washed with little cold water, and then in as short time as possible dried with but very gentle warmth. They are to be pre-

* This ironsalt has also been made dry to prepare triturations from it; but it is improper on account of its great liability to decomposition. Relating the form of doses it is here the same as what has been said under the head "*Ferr. acet.*"

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served in well closed vessels, and a watery solution is to be prepared from them, which can be used as not spoiled only as long as no sediment is formed in it. Let it be carefully protected from light.

FILIX.

Radices Filicis maris. Common male fern. From Polypodium Filix mas L. Sex. Syst. Cryptogamia (Cl. XXIV. O. 2). Nat. Syst. Filices. Göbel II. 11. Düsseld. 19.

This beautiful, pretty fern is spread over all Europe, occurring frequently among rubble, in bushes, clear forests of needlewood, and shaded ditches. The fronds are 1 to 2′ long, the leaves bi-pinnately incised, the segments oblong, obtuse, denticulate at the apex, the petioles clothed with rust-coloured paleæ. The middle-stock is to 1′ long, lies horizontally, is cylindrical, somewhat curved, 2 to 4″ thick, formed of a quantity of apophyses, which are close together, 1 to 2″ long, 3 to 5‴ thick, round, curved, and densely set with rust-coloured scales, hiding the true stock, between which the meagre root fibres going downwards, proceed single.

The best time for collecting this root is autumn, and the plants grown on stony slopes, lying towards the North, are believed the most efficacious. From the rootstock quite fresh dug, both the inner marrowy substance is selected and the youngest, neither dried up nor blighted apophyses of a green colour like pistachio-nut, strong, sweetish-nauseous smell and similar, afterwards bitterish-rough, slightly astringent taste. Both are freed from the brown epidermis and prepared for Essence after Rule 2 with *strengthened* alcohol, which is of the odour and taste described, and of a dark brown colour.

FORMICA.

Formica Rufa L. Fam. Heterogyna. Ant, wood-ant, red-ant. emmet, pismire.

This allknown insect is found most frequently in pine-forests, where it is to be taken alive from its nests (ant-hills).

Aftcr having removed all pine-leaves, pieces of wood, little stones etc. mingled with the animals, the latter are benumbed by sprinkling with some strong alcohol, afterwards bruised in a stone-

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mortar and extracted for tincture with double their weight *diluted* spirit of wine. It is of a brown colour, and sour not disagreeable smell and taste.

FRAGARIA.

Herba Fragariæ s. Trifolii fragiferi s. Fragulæ. Wood-straw-berry. From Fragaria vesca L. Sex. Syst. Icosandria Polygynia (Cl. XII. O. 5). Nat. ord. Potentilleæ. Hayne IV. 26.

From this well known plant, spread over all Europe, the specimens grown on clear, hilly parts of the fore-woods are especially collected along with the root in the beginning of the flowering-time in the month of May, and prepared for tincture after Rule 3; it has a slight, however not lasting smell of strawberries and a brown colour.

GENTIANA CRUCIATA.

Radix Gentianæ cruciatæ s. minoris. Cross-wort gentian. From Gentiana cruciata L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Gentianeæ.

This plant is found on dry sunny hills, on the edges of woods and on slopes all over Central-Europe. Stem, ascending to 12″ long, roundish, at the lower part pressed together, often purplish, richly set with leaves, the leaves crosswise, connate like sheathes at the base, broad-lanceolate. The dark violet, bellied-tubular, long flowers stand verticillate aggregate in the upper axils.

The ramose, long-furrowed root, from a quill to a finger thick, yellow-white, forms a head from which numerous stems sprout out. Dried it is of a yellow-brown-red colour, very strong smell of gentian and similar bitter, but by far not as nauseous taste as that of *Gentiana lutea*.

From the dry root, gathered during the summermonths, we prepare with *diluted* spirit of wine a tincture after Rule 1, being of light yellow-brown colour, and moderately bitter taste.

GENTIANA LUTEA.

Radices Gentianæ luteæ s. rubræ s. majoris. Gentian bitterwort. From Gentiana lutea L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Gentianeæ. Göbel II. 14. Düsseld. 199.

The root bought from druggists appears in 3 to 11″ long,

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½ to 1″ thick specimens, having often several heads, being somewhat branched, cylindrical, at the end thinner, curved and contorted, of dirty-rust-red or a little lighter colour, of peculiar, disgusting smell and penetrating, bitter, long-lasting taste

The middling thick, neither worm-eaten nor very old roots are prepared for tincture after Rule 1 with *diluted* spirit of wine, which is of a yellow-brownish colour and very bitter taste.

GEUM.

Radix Caryophyllatæ s. Sanamundæ s. Gei s. Gei urbani. Avens, herb bennet. From Geum urbanum L. Sex. Syst. Icosandria Polygynia (Cl. XII. O. 5). Nat. ord. Rosaceæ. Göbel II. 25. Hayne IV. 33. Düsseld. 310.

This plant indigenous to the greater part of Europe and very spread, grows near hedges, in moist uncultivated places, in shaded woods and fore-mountains. It shoots stems, one to two feet high, often standing oblique, single, above branched, set with rough hair turned downwards. The root-leaves and lower stem-leaves are long-petiolate, pinnate, having 5 to 7 cuneiformly incised leaflets. The yellow flowers, with small petals, appear from May to July single, on long erect or nodding peduncles at the end of the stems.

The root forms a vertical, or oblique lying stock, several inches long, to ½ inch thick, often having several heads or being succise, set thick with long, darkbrown, brittle fibrils. Its cross-cut shows under the resinous epidermis a thick fibrous yellow rindbody and a violet or reddish granular medullar substance. Its smell is, especially after exsiccation, peculiarly similar to cloves, the taste is the same, a little bitterish astringent.

We gather during the first months of spring only the root, to prepare from it a tincture after Rule 3.

GINSENG.

Radix Ginseng s. Ginsing s. Ginzing. Ginseng, All-heal. From Panax quinquefolium. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Araliaceæ. Göbel II. 5. fig. 2. Düsseld. Suppl. 69.

About this once so renowned and costly root the authors are by no means right; this is proved by their differing descriptions

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and contradicting statements, if only Geiger's, Göbel's, Döbereiner's und Martius' works are compared.

To the like uncertainty it must be subjected, to which of the described roots, being evidently of different origin, the pathogenetic examinations are to be referred. So much indeed seems certain, that the root, still now so highly valued and dearly paid for in China and Japan has come the most seldom to Europe. The most probable opinion might be, that those roots, coming from *Sium sisarum* (*Willd.*) and occurring mixed among *Senega*, have served first for the examinations. This at least is the drug, which the merchants use to furnish under the name of *Radix Ninsi* (Ginseng root).

The tincture, prepared from them after Rule 1 has a straw-yellow colour and little taste.

GLONOINUM.

Nitroglycerine.

The oil-sweet (Glycerine or oxide-hydrate of Glyceril) got as a by-production when preparing plaister from oxide of lead and oil or fat, is dissolved from the ready mass of plaister by pouring water over it, and letting the mass for some time longer in contact with the water; the liquid is then poured off and by throwing sulphuretted gas through it first freed from the lead it contains, and then evaporated. The Glycerine is thus obtained in the form of a clear thickish syrup, having a specific gravity of 1,252 to 1,27, yellowish colour, nauseous sweetish taste and no odour.

From the oilsweet thus obtained let be added by drops and at intervals continually stirring so long into a mixture consisting of two parts of concentrated sulphuric acid and one part concentrated nitric acid refrigerated to the freezing-point, till single supernatant oily drops show a point of saturation *. The mixture is then poured into a copious quantity of cold water, whereby the glonoine separates in the beginning in the form of a loose fatlike precipitate, which, repeatedly washed with water and left to settle, at last condensates to a clear oily liquid, collected at the bottom

* This process requires the greatest care, to prevent the mixture becoming too hot, or else detonation will ensue, which not alone will spirt about the whole liquid, being lost by it, but also may endanger the chemist; let it therefore be made in free air and at longer intervals.

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of the vessel, is dissolved in ether, after having poured off all the ablution-water, and which, for removing the last part of the water, must be agitated with some chloride of calcium, separated from it by filtering, and evaporated; then the glonoine will remain as an oil-like liquid, having a sharp taste, wine-yellow colour, and etherlike smell.

It is to be preserved in well-closed glasses and solutions in strong spirit of wine are to be made from it.

GRANATUM.

Cortex Punicæ Granati. Cortex radicis Granatorum s. mali punicæ. Bark of the root of the pomegranate. From Punica Granatum L. Sex. Syst. Icosandria Monogynia (Cl. XII. O. 1). Nat. ord. Myrtaceæ (Granateæ). Göbel I. 20. Hayne X. 35. Düsseld. 301.

The pomegranate tree is indigenous to Southern Europe and America, but is cultivated in the botanical gardens of the Northern countries of Europe. The bark peeled off from the root of trees grown wild, and freed from the alburnum occurs in pieces of 1 to 3″ long and $^1/_4$ to 1″ broad; externally its colour is ash-gray or gray-yellowish, internally more yellow. It colours the saliva yellow and makes with water on paper a yellow stroke, being changed by acid into rose-colour, by alkalis into brown, but by sulphate of iron into blue. The taste is astringent.

The tincture to be prepared after Rule 1 is of a straw-yellow colour, and its taste is bitter.

GRAPHITES.

Cerussa nigra, Carbo mineralis, Plumbago, Carburetum Ferri. Graphite, Plumbago, mineral Carbon, improperly black lead, Keswick lead, wad. Called by some Carburet of Iron.

This mineral, coming best from England, is impellucid, of steel-gray colour, more or less turning into black, having slight metallic splendour; it crystallizes partly in tabular, sixsided columns, has a laminated texture, is very soft, greasy to the touch, and staining the fingers very much.

The Graphite intended for medicinal use is reduced to a powder as subtle as possible, boiled with pure water for an hour, after decantation of the water, digested with diluted nitro-muriatic

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acid for some days and afterwards carefully washed and dried upon a filter.

It is still necessary to prepare the Graphite thus worked in a peculiar manner, if it is to give a good not glimmerlike trituration. Because of the extraordinary fineness and flexibility of its scaly crystals it resists even the most continual trituration, which has lasted for hours, and shows permanently not inconsiderable portions of shining points. To obviate this, the best means is, to triturate the purified Graphite in small portions with coarsely powdered sugar of milk, adding as much water, in a roomy porcelain dish, as is necessary for making the whole a thickish pulp, till the water for the most part is passed off again and the mass begins to become cloddy. Now as much boiling hot water is poured over the whole, as is necessary for dissolving the sugar of milk as well as to separate the finest parts of the mineral got by the known operation of washing from the coarser. This washed Graphite is dried after having been washed repeatedly, and used for triturations.

GRATIOLA.

Herba Gratiolæ s. Gratiæ Dei s. Digitalis minimæ s. Centauroidis. Hedge hyssop, water hyssop, Gratia Dei. From Gratiola officinalis L. Sex. Syst. Diandria Monogynia (Cl. II. O. 1). Nat. ord. Scrophularieæ. Brandt and Ratzeb. I. 13. Hayne III. 13. Düsseld. 155.

This plant growing in Central and Southern Europe near the borders of rivers, lakes and waterditches, also on moist meadows has a creeping, articulate, on the joints fibrillous root, as thick as a quill and whitish; the stem, ½ to 1½′ high, erect, little branched, above foursided; the half-clasping, lanceolate, from the middle finely serrate leaves stand crosswise opposite; the peduncled flowers, sitting in the axils are white or pale reddish, towards the bottom yellowish. The whole plant is smooth, pale green, inodorous, of a highly bitter taste, which distinguishes it the most easily from other plants similar to it by their habitus.

The plant collected with the root in the month of May before the development of the flowers is prepared for essence after Rule 2, which has a saturated green-brown colour, and very bitter taste.

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GUACO.

The Guaco or Huacoplant, Alexipharmac Mikania. From Mikania Guaco Humb. et Bonpl. Sex. Syst. Syngenesia Æqualis (Cl. XIX. O. 1). Nat. Syst. Compositæ.

This climber, highly-valued for its medicinal virtues in Columbia, Mexico, Guatemala, Venezuela and other parts of America, to which it is indigenous, was unknown to us till the epidemic cholera passed through Europe. It was recommended at that time as a remedy against that sickness and was introduced first in Europe by the druggists of South Germany. It is a liana sticking to the trunks and branches of the trees in its neighbourhood. The very long, round, contorted, furrowed stems, are to ½″ thick, gray-greenish, glitteringly shining, ligneous, and set with rough hair. The leaves, 4 to 5″ long, about 3″ broad, are scarce, petiolate, ovate-pointed, slightly dentate, below set with stiff hair; the flowers stand at the sides of the younger branches in corymbs. Of the peculiar scent of the fresh plant, the drug possesses hardly a trace. The taste of the leaves is more bitter, than that of the stems, and the first are to be preferred as the more efficacious vehicle.

For preparing a tincture after Rule 1, select the thinner parts of the tops of the stems, the leaves and flower-branches. It has a pale-yellow-green colour.

GUAIACUM.

Resina Guaiaci nativa. Gummi s. Gummi-resina Guaiaci. Gummi ligni sancti. Guaiacum. Gum Guaiac. From Guaiacum officinale. L. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Rutaceæ (Zygophyllaceæ).

The resin Guaiacum consists of irregular, large, multangular pieces, tears or masses, splitting on the surface, on the thin, conchoidal fracture-flats yellow-greenish pellucid, of a peculiar smell, similar to benzoin, and sweetish afterwards rough taste; the gray-white powder turns soon green in the open air. In alcohol it dissolves easily leaving only adulterations, mechanically mixed with it.

After Rule 1 we prepare a tincture of it, which has a dark-brown colour.

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GUTTI.

Gummi Gutti s. Guttæ s. Gambæ s. Gambogiæ, Gutta Gamba s. Gambogia. Gamboge, Ceylon Gamboge. From Hebradendron gambogioides. Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Guttiferæ.

We get this drug in compact masses partly in cylindric form, of 1 to 3″ in diameter and to 12″ long, partly in lumps, of several pounds weight, which are shapeless, dirty green-yellow on the surface, striped with impressions made by leaves. The conchoidal fracture is shining brown-yellow, the stroke upon paper lightyellow, laid on with water shining gold-yellow; taste in the beginning little, later rough; no smell.

After Rule 1 a tincture is prepared from it, having a gold-yellow colour.

HÆMATOXYLON.

Lignum campechianum s. campescanum s. campechense s. cæruleum. Logwood, Campeachy wood. From Hæmatoxylon campechianum. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Leguminosæ.

The logwood comes from Mexico (Honduras) in large yellow-reddish logs, freed from the bark and alburnum, having an uneven, hewn surface of bluish-black, inside blood-red colour. It is also brought as rasped logwood (logwood chips) in rather thin chips, ½ to 2″ broad, several inches long, partly elastic. It is of a rather considerable weight and compactness, slight violetlike odour, and sweetish astringent, afterwards bitterish taste, colouring at the same time the saliva violet-red.

We prepare a tincture of it after Rule 1, which has a yellow-brown colour and taste like stated above, but is odourless.

HELIANTHUS.

Sunflower. From Helianthus annuus L. Sex. Syst. Syngenesia Frustranea (Cl. XIX. O. 3). Nat. ord. Corymbiferæ.

This annual garden plant, known to everybody, and cultivated everywhere, brings forth its flowers in July and August. The whole flowers to the bract are selected at the time of their full development before the period of fructification, for preparing from them an es-

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sence after Rule 2, which is of a wine-yellow colour, weak odour and taste.

HELIOTROPIUM.

Heliotrope, turnsol, girasol. From Heliotropium Peruvianum. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Asperifoliæ.

The small bush, 1 to 2′ high, with flowers smelling agreeably of Vanilla is cultivated everywhere in gardens and flowerpots. The stem, below ligneous, divides itself in many branches, shooting forth ovate-lanceolate, short-petiolate, rugose, haired leaves. The peduncles are haired towards the top and partite, bearing small white or reddish-blue, very strong-scented flowers in curved spikes, turned to one side.

The whole plant, except the root, is used in the flowering time for preparing an essence after Rule 2.

HELLEBORUS.

Radices Hellebori s. Ellebori nigri s Veratri nigri s. Melampodii. Black Hellebore, Christmas Rose. From Helleborus niger. L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7). Nat. ord. Ranunculaceæ. Brandt et Ratzeb. I. 34. Hayne I. 7—8. Düsseld. 393. Göbel II. 31.

This perennial plant, not seldom cultivated in gardens on account of its beauty, grows wild in the woods of the fore-Alps and the mountains of Central and Southern Europe. Leaves and flowers shoot immediately out of the root; the former are long-petiolate, palmate, divided in 7 to 9 lanceolate leaflets, of unequal size, evergreen, smooth; the latter appear from December to February on peduncles as high as a hand, are pretty large, spread, milkwhite or reddish-white, pendulous, sweetscented. The root consists of a short, creeping, severalheaded root-stock and the fibres, developping themselves on all sides, are numerous, coarctate, long and round, of an externally darkbrown, internally yellowish-white colour and medullary substance, showing on the cross-cut a stellate medullar string. The smell of the root, when not too old, is rancid, nauseous, something like Senega; its taste acrid bitterish. This drug is subject to different mistakes and adulterations, therefore its genuineness is always to be examined with especial care.

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The root gathered from plants grown wild, immediately after the period of flowering, which ensues during the winter months, is cautiously dried and prepared for tincture after Rule 1, having a brownish-straw-yellow colour and weak smell.

HYOSCYAMUS.

Herba Hyoscyami nigri s. Jusquiami. Common wild or black henbane. From Hyoscyamus niger L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solaneæ. Brandt et Ratzeb. I. 14. Hayne I. 28. Düsseld. 192.

This known poisonous herb is spread all over Europe, and is found growing wild near roads, on heaps of rubbish and in gardens; it is also frequently cultivated for medicinal use. The plant varies after its place between $^1/_2$ and $2^1/_2$′ height; the leaves near the root and those being the lowest of the stem are petiolate, deep incised, sinuously dentate, the lobes pointed, the upper leaves sessile, clasping, all set with soft hair, sticky, gray-green. The flowers standing at the ends, form onesided spikes, the single non-peduncled flowers in villous, viscous calyces, have yellow petals, netlike run through by violet veins. The whole plant has an extremely disagreeable, disgusting and benumbing smell.

At the period of the development of the flowers, in June or July, the leaves and flower-branches, after removing the ligneous stems are used for preparing, according to Rule 2, an essence which has the smell of the plant very much, and is of brown-green colour.

HYPERICUM.

Herba s. summitates Hyperici s. Perforatæ. Herba solis. St. John'swort, All saints'wort, Parkleaves, Hypericon. From Hypericum perforatum L. Sex. Syst. Polyadelphia Polyandria (Cl. XVIII. O. 4). Nat. ord. Hypericineæ. Hayne VIII. 42. Düsseld. 420.

This perennial plant is found all over Europe near the edges of woods, in ditches, near roads and balks, and upon sunny hills. The stem is erect, branched, round, smooth, two-edged, set with small, opposite, half-clasping, oblong-ovate, obtuse, smooth leaves, which when held against the light, look as if they were perforated. The flowers standing at the ends of the branches, are short petiolate, star-shaped, yellow, at the margin blackdotted, form cymes, and leave obtuse-triangular, resinous-shining, brownred seedcapsules.

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The best time for gathering it, is in August, soon after its having blossomed, when the seed-capsules are not yet ripe; the latter are selected for preparing from them after Rule 3 a tincture, of a dark-purple colour and a slight balsamic odour.

IGNATIA.

Faba sancti Ignatii, Fabæ Indicæ s. febrifugæ. St. Ignatius' bean, Papeeta. From Ignatia amara L. fil. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. Syst. Strychneæ (Logoniaceæ—Apocyneæ).

The bush indigenous to the Philippine Islands yields its seed or almonds for the drug commerce. They consist of obtuse, unequal tri-or more angular stones, as big as hazelnuts and bigger, of an extremely tough, hornlike condition, externally gray, sometimes lighter, sometimes darker, dim, rough to the feeling, covered with a tender felt, sitting tight on, internally whitish, light or dark gray, pellucid when cut off in thin pieces, inodorous, of an extremely bitter taste and tolerably heavy.

The best method for the diminution of these very hard and tough almonds is, to cut them with a sharp knife in slices, as thin and flexible as possible, to dry these with moderate heat thoroughly, and then to triturate them in a mortar to powder, which is used for preparing a tincture, having a pale-strawyellow colour and very bitter taste. *

INDIGO.

Color Indicus. Indigo. From Indigofera argentea L. - and several other species. Sex. Syst. Diadelphia Decandria (Cl. XVII. O. 6). Nat. ord. Papilionaceæ.

This known valuable colouring matter is contained in the epidermis of the Indigoplants, and is drawn from them by a process of fermentation, to which they are subjected. It is furnished in trade in loose, light, dry cubes, of some cubic inches, or in irregular fragments, which have a deep dark blue colour, fiery shining coppery and staining the fingers very much, conchoidal fracture, and neither smell, nor taste. Swimming upon water, it is as little

* The tincture of the Ignatius'bean separates like the tincture of the nux vomica at stronger wintercold small crystals of the alkaloid contained in it; though these dissolve again through the influence of a higher temperature, it is at all events better, to withdraw the tincture from the influence of cold.

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soluble in it as in alcohol, but completely in concentrated sulphuric acid, and volatile in the heat.

Triturations are prepared from it.

IODUM.

Iodina, Iodium, Iodine. An elementary substance got from the ashes of different sea weeds in quantities, provided finest from the maritime provinces of France. It appears in black-gray, metallic-shining, scaly thin lamins, very similar to graphite, a little reddish diaphanous, soft, friable; already volatile at common temperature, it is sublimed in the heat forming violet-red vapours, of strong smell, coming very near to that of chlorine and an astringent acrid, pungent, long-lasting taste.

Pure Iodine dissolves easily and perfectly in ten times as much *strengthened* alcohol, wherefore we apply only this solution (termed 1) for further attenuations, being compelled to reject as improper any trituration with sugar of milk, made in whatever proportion. The tincture is of a darkred-brown, scarcely pellucid colour, and stains the skin lasting yellow-brown *.

IPECACUANHA.

Radices Hipecacuanhœ s. dysentericœ s. brasiliensis. True Ipecacuanha, annulated, Brazilian or Lisbon Ipecacuanha. From Cephaëlis Ipecacuanha W. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Rubiaceæ. Göbel II. 30. f. 1. a—g. Düsseld. 258. Hayne VIII. 20.

Under this name different sorts of the root occur in trade, coming from different plants. The annulated brown root is the most efficacious and therefore exclusively to be applied. It is to 5″ long and 1 to 1½‴ thick, bent and contorted into a great variety of figures, of a very unequal thickness, so that it appears in one and the same piece now as if compound of puffs, now as if corded, not seldom as if it were composed of single rings strung together. The surface is rough, commonly wrinkled, of gray-brown colour; under it lies the rindsubstance, which contains the effica-

* The solution is only to be kept at hand for a short time, and must be preserved in well-closing glasses, provided with glass-stoppers, for it destroys cork-stoppers very soon, and Iodic acid is formed in contact with the air. The solution of the pure Iodine in alcohol being perfect, it deserves not to be termed Tincture, as it is designated in most pharmacopœias; we must consider it rather analogously to the solutions of salts and therefore designate as is above prescribed.

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cious constituent in the greatest proportion, to 1‴ thick, of tight, granular resinous texture, and brownish colour. It surrounds the round, ligneous, lighter medullary string only loose and is often crumbled off from it in some places. The smell is slightly musty, irritant in pounding, the taste bitter, acrid, nauseous, causing a strong choking sensation for vomiting.

Tincture is prepared from it, which has a lightbrown colour.

JACEA.

Herba Violæ tricoloris s. Trinitatis s. Jaceæ. Hearts' ease, pansy, three-coloured violet, herb trinity, beedy's eyes. From Viola tricolor L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Violaceae. Hayne III. 4—5. Düsseld. 387.

This plant, spread over all Europe, and known to everybody, grows especially on fallow grounds and cloverfields. Let it be gathered in spring at the beginning of its flowering-period from not too longpetiolate specimens, and on account of the very mucous condition of the fresh-pressed juice, the tincture be prepared more properly after Rule 3, which is of a dark brown-yellow colour and an agreeable balsamic odour, being not at all to be found in the green plant.

JALAPPA.

Radices Jalappæ s. Gialappæ s. Jalopii s. Gelappii s. Chelapæ s. Mechoacannæ nigræ, Jalap. From Convolvulus Jalappa L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Convolvulaceæ. Göbel II. 10. Düsseld. 198.

The roots bought from druggists consist of differently shaped pieces, partly globular, partly turnip-shaped, or pear-shaped, partly in slices, from the size of a walnut to that of a large apple; it is of considerable weight, of very strong and tough texture and gray-brown colour. On the fracture or cross-cut it is very resinous-shining, run through with darker stripes, as it were in layers; the odour is strong resinous, nauseous, the taste extremely nauseous, rough, loathsome, lasting long.

For preparing a tincture after Rule 1 the most ponderous and resinous pieces must be selected and cautiously dried, also rather fine pulverized previously. The tincture is of a brownish-straw-yellow colour and the taste like above-mentioned.

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JATROPHA.

Semen Ricini majoris. Ficus infernalis, Nux cathartica Americana. Jatropha, large, black or Indian cathartic nut, large Ricinus-seed, Indian sweet pine kernel. From Jatropha Curcas, L. Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Euphorbiaceæ.

The seeds imported by commerce, come from Cuba, the Westindia Islands, and South America, are blackbrown, marbled with lightbrown stripes and dots, 7 to 10‴ long and 3½ to 4‴ broad, nearly as thick; they contain in their shell a whitish almondlike kernel, having a taste at first mild, afterwards lasting acrid and rough.

The tincture is prepared after Rule 1.

JUGLANS.

Cortex nucum Juglandis. Walnut. From Juglans regia L. Sex. Syst. Monœcia Polyandria (Cl. XXI. O. 7). Nat. ord. Juglandeæ. Hayne XIII. 17. Düsseld. 96.

The beautiful tree cultivated from Southern Europe to Central Germany has large, unequally pinnated, long-petiolate leaves, with smooth, entire, petiolate, sweetscented leaflets. In June and July from the unripe, smooth, green fruit the shell is taken and applied for essence, which has a darkbrown-green colour and bitter, astringent taste.

JUNCUS EFFUSUS.

Fluttering rush. From Juncus effusus L. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1). Nat. ord. Junceæ.

Very common on moist, boggy meadows, on the margin of ponds and ditches. Rootstock creeping, branched, copiously set with onesided long fibres running downward, turflike. Culms 1 to 2′ high, grassgreen, very smooth, round, stiff, internally marrowy, set at the base with yellow- or reddish-brown sheathes and scales. Cyme rich in flowers, petiolate, turned to one side.

The very similar *Juncus glomeratus L.* is distinguished by finely striped culms, and the panicle having much shorter petioles. In July at the period of flowering the roots are gathered and after Rule 3 a tincture prepared from them. It is of light-yellowbrown colour, having little smell and taste.

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JUNCUS PILOSUS.

Haired rush, Spring grove rush. From Juncus pilosus L. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1). Nat. ord. Junceæ.

A grass species spread over all meadows, in groves and woods, the rootstock of which is oblique, sprouting suckers; culm $^1/_2$ to 1′ high, erect, leaved; leaves sheathy at the base, lightgreen, loose, set at the margin with long, soft, scattered hair, the cyme standing at the end, manybranched, forkshaped.

During the flowering-period in April and May the root is gathered and worked as has been stated of the preceding. The appearance of the tincture is like that of the former.

KALI BICHROMICUM.

Bichromas kalicus. Red or bi-chromate of potash.

This salt is made in large quantities for technical purposes from the native chromate of iron. It is got in small quantities by dissolving yellow chromate of potash in water and evaporating again to the point of crystallization under addition of nitric acid. It forms large yellow-red, anhydrous crystals, being large foursided prisms and tables, persisting in the air. The solution with water can only be made in the proportion of 5 : 95, the salt re-crystallizing out of the fluid again, when contained in a larger proportion; the second attenuation is accordingly to be brought with 20 to 80 drops to the proportion of $^1/_{100}$.

KALI CARBONICUM.

Nitrum fixum, Sal tartari, Alkali vegetabile aeratum, Kali subcarbonicum, Carbonas Kali s. kalicus s. Lixiviæ, Subcarbonas Potassæ. Fixed nitre, Potash, Salt of Tartar, Vegetable alkali, carbonate of potash, subcarbonate of potash.

One part of pure crystallized nitre is detonated with two parts of purified tartar, after having previously reduced both to a fine powder and mixed exactly, in an iron crucible, free from rust and heated; the black mass obtained, is lixiviated with cold water, the liquid filtered and evaporated in a porcelain dish, till it becomes as dry as dust. For removing a trace of lime, which may be brought in by the tartar easily, let the powder again deliquesce in the free air. After some weeks the thick fluid is diluted with so much water, that it may easily be separated from the now formed car-

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bonate of lime by filtering; then it is again reduced to dryness and preserved in well-closed vessels. Let it be a perfectly white powder, dissoluble in little water, leaving no residue.

The solution in water after the general rule given is the fittest form for medicinal use; but also the 2d. attenuation (that $= {}^1/_{100}$) is to be prepared still with water, the 3d. with *diluted* spirit of wine, since even weak spirit still separates the salt in this proportion. Triturations with sugar of milk, though used, are not serving the purpose, because they are subject sooner to be spoiled.

KALI CHLORICUM.

Kali muriaticum oxygenatum s. hyperoxygenatum s. oxychlorinicum s. oxyhalogenatum, Chloras kalicus s. Potassæ. Hyperoxymuriate of potash, Chlorate of potash.

With the apparatus described under the head "Chlor" chlorine-gas is evolved in the manner there prescribed; and this is conducted (not into water as described there but) in a concentrated solution of caustic potash.

The chlorine-gas coming over is immediately absorbed by the caustic potash in the receiving vessel, and in the liquid form crystals of chlorate of potash; the chlorine-kalium (muriate of potash) arising at the same time remaining dissolved. After the labour is finished the obtained crystals are taken out of the liquid and purified by dissolving and re-crystallizing; they then shoot on in white rhombic columns or tables, shining like mother-of-pearl, having a bitter, cooling taste.

For medicinal use a solution in water of ${}^1/_{20}$ is prepared and the attenuations continued as has been prescribed under the article ***Kali bichromicum.***

KALI HYDRIODICUM.

Kali s. Kalium hydriodatum s. hydriodinicum s. iodatum, Iodetum Kalii s. kalicum, Ioduretum Kalii s. Potassæ. Iodite of Potassium, hydriodate of potash.

It is prepared by dissolving Iodine in caustic potash liquor till it is neutralized, which is perceived by the liquid being coloured when Iodine is added in excess. The whole mixture is evaporated to dryness in a polished iron crucible, and heated to glowing flux, but only gentle kept in it for some time and then poured out. The cooled mass is dissolved in twice as much dis-

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tilled water, the solution filtered and evaporated to crystallization. Colourles, pellucid cubes of acrid saltish taste are formed, becoming a little moist in the air, and being dissolvable in a little less water than their own weight.

Only the solution with water in the known proportion is the proper medicinal form; triturations with sugar of milk are to be rejected.

KALI HYDROBRIOMCUM.

Kali s. Kalium bromatum s. hydrobromatum, Brometum Kalii s. kalicum, Bromuretum potassicum. Bromide of Potassium. Bromate of potash.

The manner of its preparation from pure Bromine (q. v.) is quite the same, as has been stated in the preceding article (***Kali hydriodicum***). It crystallizes in white, pellucid cubes or quadrangular tables (prisms), which are a little shining like mother-of-pearl, persistent in the air, easily dissolvable in water, of pungent-saltish, at the same time cooling taste.

Form of medicine like preceding.

KALI NITRICUM.

Alkali vegetabile nitratum, Sal petræ, Nitrum, Nitras kalicus s. Potassæ. Saltpetre, nitre, prismatic saltpetre, purified nitre; nitrate of potash.

To a concentrated solution of the best bought saltpetre is added by drops first a solution of nitrate of silver, then a solution of nitrate of baryta and lastly a solution of a carbonate of potash, each only as long as it makes the liquid turbid; therefore between the application of each reagent the necessary time must be awaited, that the liquid may become perfectly clear again, in order to be able to observe the effect of the new added reagent with certainty. At last the whole liquid is filtered through powdered charcoal, evaporated to the point of crystallization and poured into another cool roomy dish, in which it is stirred continuously, till it has become quite cold. The separating crystalline powder is collected upon a filter washed with little, quite cold water and then dried between bibulous paper with moderate heat; it will be a dazzling white, ponderous, tender powder, having crystalline splendour.

A watery solution is made from it in the common proportion.

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KAOLIN.

Kaoline, porcelain or China clay.

A mixture of aluminous and silicious earth, to be found in nature filling hollows like layers between Granite and other rocks, and distinguishing itself from other aluminous earths by its being free from iron, of quite white colour or only pale coloured. The most excellent occurs in the Saxon mineral mountains, near Misnia in Saxony, near Passau in Bavaria and near Karlsbad in Bohemia.

Let it be reduced to a fine powder first by pounding and then by washing, to make use of it for triturations.

KERMES.

Kermes minerale, Pulvis Carthusianorum, Sulphur stibiatum rubrum s. rubeum, Sulphuretum stibii rubrum, Sesquisulphuretum Stibii præcipitatum. Kermes mineral. Carthusian powder, Sesquisulphuret of antimony.

24 parts of crystallized carbonate of Soda are heated to seething with ten times as much water in a polished iron boiler, then adding to it 1 part of sulphuret of antimony reduced to a most subtle powder, under continual stirring, they are kept boiling for two hours, making up, from time to time, the water passed off in vapour.

The liquor after short rest for deposition of what is not dissolved is poured still boiling hot upon a thick warmed filter, spread over a likewise warmed, proper, large vessel. After perfect refrigeration of the liquor, to be effected as slow as possible, a fiery brown-red, loose precipitate has been deposited, to be repeatedly washed carefully with cold water, then collected upon a filter and dried with the most gentle warmth.

The dry powder taken from the filter, is to be reduced to perfect uniformity by half an hour's trituration in a porcelain dish and to be well preserved in a vessel protected from light.

Triturations are made of it.

KREOSOT.

Creosotum. Kreasote, Creasote, Creosote. Flesh-preserving or mummifying principle.

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This is a production of dry distillation of vegetable substances in a raw state, contained the strongest in pyroligneous acid and and tar. The creasote bought from chemical establishments is a colourless fluid, similar to an essential oil, of strong refractive power, and 1,037 specific gravity; it has a penetrating and long-lasting smell of woodsmoke, especially when diluted with water, burning-caustic afterwards sweetish taste, acts benumbing upon the feeling of the skin and disjoins the epidermis. It reacts neither acid nor basic, makes a fatspot upon paper, vanishing again after its evaporation, is volatile and distills over unaltered in closed vessels. Heated or with the aid of a wick, it burns with a very sooty flame.

As to its purity it is to be tested, whether it contains Eupion and Paraffine, by dissolving it in concentrated liquor of caustic potash and diluting it with water, after which it must not become turbid. Picamar makes itself known by its bitter taste and by forming crystals in the cold, when mixed with diluted caustic lye. If it contains Ammonia a solution of acetate of lead would indicate it, when kreasote-water should become turbid with it.

Kreasote is little dissolvable in water; but soluble in any proportion in strong alcohol and ether; we prepare therefore an alcoholic solution in the known proportion, which is to be kept well closed and apart on account of its penetrating and adulterating smell.

LACHESIS.

The poison from the venom-teeth or fangs of ***Trichonocephalus Lachesis,*** the lance-headed viper (virus of the rattle-snake), a species of snakes living in the hot parts of South America, being more than 7′ long, of yellow-reddish colour, with a longitudinal row of large, black-brown, rhombic spots on the back, each including two spots of the prime-colour. The poison is like saliva, less tenacious, transparent and light, with a green hue; in the free air it becomes dry to a yellow mass, which retains long its poisonous properties.

We must content ourselves with each form or preparation, in which it is sent from the country of the snake, and can only depend on the mediation of learned physicians. The best preservation might be with *diluted* spirit of wine (in a fixed and known proportion), the trituration with sugar of milk causing always the apprehension of

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its partly being decomposed, and of the increase of this decomposition subsequently, to which animal substances are so much subjected.

LACTUCA.

Herba Lactucæ fœtidæ s. Intybi angusti. Wild poisonous lettuce. From Lactuca virosa L. Sex. Syst. Syngenesia Æqualis (Cl. XIX. O. 1). Nat. ord. Lactucaceæ. Brandt et Ratzeb. I. 23. Hayne I. 47. Düsseld. 250.

Upon walls and near hedges, roads, and on heaps of rubbish of South and Central Europe this biennial plant occurs frequently, is also easily cultivated from seeds. The round, erect stem attains a height of 5 to 6′ and divides itself above in many spread branches. The root-leaves are entire, ovate, obtuse, cuneiform, running out into a petiole, the stem-leaves alternate, sessile, clasping, sinuate-incised, finely dentated, the midrib set with prick-like bristles. The pale-yellow ray flowers, standing at the end, have a cylindrical, later widened involucre. The whole plant has, especially during the flowering-period (July to August) an exceedingly strong nauseous-loathsome smell, and issues, when wounded, a white, thickish milky juice, indurating in the air to yellow-brownish scales or little clods (*Lactucarium*).

In this time the whole plant, the older, ligneous parts of the stem excepted, is used for preparing an essence after Rule 2. It is of yellow-brownish colour, and has the peculiar smell of the plant in a high degree. *

LAMIUM.

Flores Urticæ s. Galeopsidis maculatæ. Dead nettle, white archangel, blind nettle. From Lamium album L. Sex. Syst. Didynamia Gymnospermia (Cl. XIV. O. 1). Nat. O. Labiatæ. Hayne V. 41.

This plant, occurring everywhere on walls, hedges, fences and the edges of meadows, is sufficiently known, so that it does not need particular description. It is only to be taken care, that no other species of the genus *Lamium* be mixed with it, which are

*) If the stems are cut all above the root, and the latter left in the ground, it will sprout forth in the next year again a perfect and flowering plant.

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as abundant as it, wherefore only specimens in the flowering-period are to be used for essence, to be prepared after Rule 2, being of brown colour, besides inodorous and of little taste.

LAUROCERASUS.

Folia Laurocerasi. Cherry Laurel, Laurel cherry. From Prunus Laurocerasus. Sex. Syst. Icosandria Monogynia (Cl. XII. O. 1). Nat. ord. Rosaceæ. Hayne IV. 41. Düsseld. 318.

The tree, indigenous to Asia, and attaining there a height from 12 to 18′, is frequently cultivated in Southerly and Central Europe, where it becomes only as high as a moderate shrub and gets its shape. The beautiful, shining-green, finely serrato-dentated, petiolate, leatherlike leaves are evergreen. They are gathered in the summermonths and a tincture prepared from them after Rule 3, having a saturated blackish-green colour and the known smell and taste of bitter almonds.

LEDUM.

Folia s. Herba Rorismarini sylvestris s. Anthos sylvestris s. Cisti Ledi. Wild rosemary, marsh tea, marsh rosemary, Dutch myrtle. From Ledum palustre L. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Ericaceæ. Brandt et Ratzeb. I. 22. Hayne III. 21. Düsseld. 218.

This evergreen bush occurs on swampy, marshy meadows in ern and Eastern parts of Europe, is 1 to 2′ high, has alternating, linear-lanceolate, at the margin much revolute, above shining-green leaves, which are covered below with a rustcoloured felt (being the characteristic), has white, maniflowered corymbs, standing at the end, and a strong balsamic, camphorlike smell. In June, the period of flowering, from leaves and flowers separated from the ligneous stems, a tincture is prepared after Rule 3, which has a darkbrown colour, strong smell and turpentine-like taste.

LITHION CARBONICUM.

Lithium. Oxide of Lithion. Carbonate of Lithion.

This mineral alkali occurs in the waters of Karlsbad, Franzensbrunnen, Marienbad and several others. The minerals which it

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contain are Petalite, Spodumene, Lepidolite, Apyrite, Amblygonite and Triphylline.

In the last it is combined with phosphoric acid, and this offers the easiest method of preparing it. The mineral reduced to the most subtle powder is boiled with muriatic acid, to which is added some nitric acid, for changing the present suboxides of iron and manganese into oxides. The mass is made dry and again dissolved with water, leaving back silicious earth besides these two oxides.

The solution being filtered, the last part of oxide of iron and manganese is separated by acetate of potash and then the phosphate of lithion is decomposed by carbonate of soda.

The carbonate of lithion appears as a loose, white precipitate, which, carefully washed and dried, furnishes a very light, dazzling white powder, to be used for triturations.

LOBELIA.

Herba s. folia Lobeliæ. Bladder-inflated Lobelia, Indian tobacco. From Lobelia inflata L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Lobeliaceæ, Düsseld. 206.

This plant, indigenous to North America, grows there in woods and upon the fields; it is cultivated in the botanical gardens of Europe. Its leaves are short-petiolate, 2″ long and 1″ broad, ovate-roundish-obtuse, at the margin undulated-dentate, wrinkled, below a little haired. They are inodorous, in the beginning of inconsiderable, but afterwards pungent taste, which causes much salivation and at last a sensation of vomiting. They occur in trade in pieces and mixed with the cut stems compressed into oblong cakes, and deserve in this state as coming from their natural place the preference before the fresh plant to be got from gardens. After Rule 3 we prepare from them a tincture of a yellow-green colour.

LOLIUM.

Crap, drank, zizany, cockle weed, darnel. From Lolium temulentum L. Sex. Syst. Triandria Digynia (Cl. III. O. 2). Nat. ord. Gramineæ. Brandt et Ratzeb. I. 1.

This species of grass occurring frequently on cornfields, has erect culms, from 2 to 3′ high, pendulous when on a luxurious place, with many-flowered long spike, the spikelets of which sit

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alternately tightly over each other, and give to the upper part of the culm an air of being bent very much hither and thither, which is to be noticed as a characteristic. The calyx of the upper spikelet is bivalve, the crown valvulæ twice as small as the calyx, the outer one with long, straight, stiff awn.

In August, at the time of the harvest, the seeds ripen and this is the best time when the ears are to be collected and the tincture prepared from them after Rule 3. It is inodorous and of a greenish brown-yellow colour.

LUPULUS.

Strobuli s. Coni Humuli, Flores Lupuli. Hops, hop-strobules or catkins. From Humulus Lupulus L. Sex. Syst. Diœcia Pentandria (Cl. XXII. O. 5). Nat. ord. Urticeæ. Hayne VIII. 36. Düsseld. 101.

The hop-plant is frequently found wild on hedges, fences, on borders of rivers and in bushes throughout all Europe; it is besides cultivated as a highly important plant in many countries, especially in Bohemia and Bavaria. The plant climbing very high, has long-petiolate, large, 3 to 5 lobed, cordate, grossly dentate leaves and diœcious flowers. We make use of the catkins of the female plant, which stand like racemes on petioles in the axils, and prefer by right as an exceptional case, those from cultivated plantations, to those grown wild, because they contain more efficacious substances. Their scales are large, ovate, obtuse, pale yellow, and on the inner base as well as also the ovary and the ripe fruit itself covered with many yellow, shining glands, which contain the aroma and bitter substance of the hops. In August and September these hop-strobules are gathered and immediately a tincture is prepared from them when still fresh, after Rule 3. This has a dark-brown-red colour and aromatic bitter taste.

LYCOPODIUM.

Pulvis s. semen s. pollen Lycopodii s. Musci clavati s. Musci terrestris, Sulphur vegetabile s. Lycopodii. Club-moss seed, Wolf's-claw pollen-dust, earth-moss seed, vegetable sulphur, witch meal, Lycopodium. From Lycopodium clavatum, Lycopodium complanatum and Lycopodium annotinum L. Sex. Syst. Cryptogamia

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(Cl. XXIV). Nat. ord. Lycopodiaceæ. Hayne VIII. 47. Düsseld. 13. A. et B.

The common club-moss is tolerably spread in dry pineforests of the whole Northern hemisphere. The creeping stem grows several feet long, the sterile branches are short and crooked, the fruit-bearing stems are erect. The leaves are linear-lanceolate, entire, ending in a long, hair-shaped point, and close the stem tight. The fruit spikes stand in pairs on scaly petioles, the bracteal leaves are ovate, pointed, dentated at the margin, pale yellow. The fruit sitting between these are small, sticky, skinny, kidney-shaped , and contain the numerous exceedingly small, palestraw-yellow spores, which furnish the officinal part of the plant. They are a tender, light, inodorous and tasteless powder, with difficulty to be mixed with water and burning vividly in the flame.

The time for collecting it is in August and September. Where there is no opportunity to gather it, and it must be bought, it is to be examined, whether it contains the pollen of other plants, which makes itself perceptible, partly, by the smell, partly, by a darker colour, by being less fine and more sticky. Adulterations with quite strange things, like hair-powder, magnesia and others are to be found out by chemical means of test.

Though conformably to the nature of this substance, its capital ingredient pollenine not being dissolvable in water or alcohol, triturations would be the most proper form for medicinal use, yet the tincture has been applied also very frequently; respecting the preparation of the tincture especially is to be observed what has been said in §. 11, Rule 1, regarding the previous preparation of the substances for use.

MAGNESIA CARBONICA.

Terra muriatica, Magnesia aërata s. alba s. salis amari s. Anglica s. Edinburgensis, also ***Magnesia Muriæ s. Nitri, Carbonas Magnesiæ s. magnesicus cum hydrate magnesico.*** White Magnesia, Carbonate of Magnesia, Subcarbonate of Magnesia.

To 12 parts of pure bitter purging salt (Sulphate of Magnesia) let be taken 13 parts of crystallized, pure, carbonate of soda, both salts dissolved apart in at least ten times as much water, the solutions both heated to seething, and then mixed hissing hot, at the same time assiduously stirring. The white precipitate obtained,

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is soon well washed, collected in a filter and first freed from water between thick layers of dry bibulous paper, afterwards dried completely in the open air. Thus the carbonate of Magnesia is a loose, porous, but cohesive, dazzling white mass, staining the fingers very much, being reduced to an unpalpable powder without trouble. Triturations are made of it.

MAGNESIA MURIATICA.

Murias Magnesiæ, Chloras magnesicus. Muriate of Magnesia, Hydrated chloride of Magnesia.

It is prepared by dissolving Carbonate of Magnesia in pure muriatic acid until it is saturated, with the aid of heat. The filtered solution is evaporated with a moderate heat so that the salt may remain dry, and the production obtained, a salt, not quite white, very deliquescent, sandy to the touch, is to be preserved in glasses to be closed most exactly.

Let be prepared from it watery solution in the known proportion and the further attenuations made.

MAGNESIA SULPHURICA.

Talcum sulphuricum, Magnesia vitriolata, Sal amarus s. Anglicus s. Saidschützensis s. Seidlitzensis s. Ebshamensis, Sulphas Magnesicus s. Magnesiæ. Bitter purging salt, Epsom salt, sulphate of magnesia.

The sulphate of magnesia of commerce is dissolved in double its quantity of hot water, the solution boiled for some time, adding some carbonate of magnesia, then it is filtered and set aside for cooling and crystallization. Commonly we interrupt the crystallization by repeated stirring, and prevent by it the formation of larger crystals; only small, white, pointed needles being formed, which we separate from the mother-liquor, wash them clean with some diluted spirit of wine and dry speedily in moderate warm air.

Form of medicine: is the same as that of the preceding salt.

MAJORANA.

Herba Majoranæ æstivæ s. Amaraci s. Sampsuchi. Sweet marjoram. From Origanum Majorana L. Sex. Syst. Didynamia

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Gymnospermia (Cl. XIV. O. 1). Nat. ord. Labiatae. Hayne VIII. 9. Düsseld. 176.

The plant indigenous to South Europe and the East, is cultivated among us as a medicinal herb as well as for culinary use. The erect, branched stem, 1' high and more, is slender, set with tender hair, obtuse-quadrangulate, having small, opposite, short-petiolate, ovate, entire, gray-green leaves. The small, white flowers, furnished with tomentose bracts, stand in small, nearly globose spikelets. The whole plant has a peculiar, not disagreeable sweetish aromatic smell and taste.

During the period of flowering, in July, flowers and leaves slipped off from the stem are prepared for essence after Rule 3.

MANGANUM ACETICUM.

Magnesium aceticum, Acetas manganosus. Acetate of manganese.

Fresh-precipitated carbonate of manganese (q. v.) is dissolved until it is neutralized in hot concentrated vinegar, the solution filtered off from the manganese in excess, and slowly evaporated to the point of crystallization. The salt crystallizes in colourless (at most pale reddish shining) rhomboidic columns, is persistent in the air, and easily dissolvable in water.

From it also a watery solution of $^1/_{10}$ is made, which on account of its being so easy decomposed by forming oxyde is to be protected carefully from light.

MANGANUM CARBONICUM.

Magnesium carbonicum, Carbonas manganosus. Carbonate of Manganese.

This salt is prepared from the sulphate of manganese, which may be made previously for this purpose by mixing accurately equal parts of crystallized protosulphate of iron and superoxide of manganese, both powdered, kneading the powder with an agglutinant (sugar or gum) and forming balls from it, each 2 to 3 ounces in weight, to be put in layers into a wind furnace having good draft, between coal, and glowing them heavy for about a quarter of an hour, after having heated them before gradually. Having powdered them subtilely still warm, afterwards the sulphate of

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manganese produced in this manner is extracted by boiling with pure water, continually stirring, the solution filtered and set aside, that crystals may be formed. The pale rose-coloured, aggregate crystals consist of quadrangular columns, liable to decompose in the air.

This sulphate of manganese is dissolved in six times as much pure water and decomposed by carbonate of soda. This must be completed in quick succession and in well closing vessels; which must not be much larger than the quantity of the fluids to be mixed requires, care being taken for excluding the influence of air in every way possible, on account of the uncommonly great affinity of manganese for oxygen. After having poured off the last washwater as perfectly as it may be done, the precipitate is collected upon a well-covered filter, the water pressed out, speedily dried between bibulous paper and at last is dried perfectly in a warmed mortar. It is a gray yellowish-white, very subtle, tender powder, of which triturations are made.

MANGANUM HYPEROXYDATUM,

Magnesia vitriariorum, Maganesium oxydatum nativum, Superoxydum manganicum. Manganese, Glassmaker's soap, gray oxide of Manganese, Binoxide of Manganese, Peroxide of Manganese.

This well known mineral, occurring frequently in separate mines, is compact or radiated, dimly shining, deep gray-black, staining very much, never quite pure, but frequently mixed with strange earthy substances, especially with lime, as also always with iron.

Select the radiated, crystalline manganese, pound it into pieces as large as peas, macerate it with common nitric acid, and wash it afterwards carefully; in this way the carbonates of the earths and the iron will be removed. Dried and reduced to the finest powder, it serves for triturations.

MARUM VERUM.

Herba Cyriaci s. Cortusæ s. Mari Syriaci, summitates Mari veri. Syrian herb Mastich, cat thyme. From Teucrium Marum L. Sex. Syst. Didynamia Gymnospermia (Cl. XIV. O. 1.). Nat. ord. Labiatae. Hayne VIII. 2. Düsseld. 170.

This plant indigenous to South Europe and Africa is culti-

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vated in our gardens, where it attains the height of a small shrub, about one foot high. The shrublike stem is hard, thin, erect, set with fine white felt, the leaves are very small, above vivid green, below tomentous, the light-red, small flowers stand in onesided racemes at the ends of the branches. The plant blooming in June and July, has a strong smell and taste, similar to camphor and valerian, both of which are very much lost if the dried plant is preserved without care.

We prepare from the fresh plant, the flowering time of which is July and August, or from the well-preserved dry plant without the root, a tincture after Rule 3, which is of green colour and strong smell and taste.

MELOE.

Meloë proscarabæus L. Cl. Insects. Fam. Trachelides. Oil-beetle, oil-clock, proscarab. Brandt et Ratzeb. II. 16.

The common oil-beetle lives all over Germany, also in South Europe and is to be found in May and June especially during the dewy morning hours below trees in the grass. It is to 2″ long, the hindbody to more than ½″ thick, of dark steel-blue colour, with reddish hue. The head is black-violet with deep impressed notable points. The wing-shells mostly shorter than the free veiny-wrinkled hindbody, of the like colour, but a little darker. Feelers and feet are nearly black.

When touched with the hands there issues from all joints, especially those of the feet, pretty much yellowish juice, strong staining, tough pellucid, acrid, in which the seat of the medicinal efficacy is found; care is therefore to be taken that in collecting the animals this juice may not be lost, wherefore it is necessary to apply a pair of nippers for griping and taking them up.

They are cut in pieces, to be poured over with strong spirit, for preparing from them a tincture after Rule 1, which is of pale greenish-brown colour, inodorous, but of a little balsamic taste.

MENYANTHES.

Herba Trifolii fibrini s. aquatici s. amari. Marsh trefoil, bog-bean, buck-beans. From Menyanthes trifoliata L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Gentianaceæ (Menyantheæ). Hayne III. 14. Düsseld. 204.

This plant spread all over North and Central Europe, occur-

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ring also in Asia and America flourishes in moist marshy places, on boggy meadows, in deep moorground, near meadow streamlets flowing slowly, and the like. The stems sprouting out of the perennial, creeping, cylindrical root, which is as thick as a quill, are round, the leaves, similar to the trefoil species, stand three together on one common pedicle, are oval, oblong-obtuse, 2 to 3″ long, vivid light-green and succulent; the whole plant is smooth. The beautiful pale rose-coloured flowers stand upon a separate scape in a raceme, and have always a villous beard.

The herb collected in autumn is speedily dried and according to Rule 1 tincture prepared from it; being of dark green-brown colour and very bitter taste, and at all events more efficacious than the essence prepared in spring from the fresh herb.

MERCURIALIS PERENNIS.

Herba Mercurialis montanæ s. Cynocrambes. Male and female French mercury. From Mercurialis perennis L. Sex. Syst. Diœcia Enneandria (Cl. XXII. O. 9). Nat. ord. Euphorbiaceae. Hayne V. 10.

The rather far spread plant, occurring in shaded, mountainous forests, on stony or moist ground, is distinguished from *Mercurialis annua,* related to it very nearly and occurring far more frequently, by its creeping, knotty, articulate root, which is verticillately fibred on the joints, by its single, low, below leafless stem and the short-petiolate, serrated, and short haired, elliptic-lanceolate leaves.

During the flowering-period, in May, the whole plants along with the root are used for Essence after Rule 2, which is of a red-brown colour.

MERCURIUS ACETATUS.

Mercurius acetosus, Hydrargyrum aceticum. Acetas hydrargyrosus. Acetate of Mercury.

A solution of the nitrate of Mercury, as is mentioned under the head *Mercurius solubilis,* is prepared and decomposed by pure. carbonate of soda, dissolved in twice its quantity of distilled water. The carbonate of mercury obtained in this way is well washed, heated to boiling in a porcelain dish with eight times its quantity of distilled water, and then gradually so much of concentrated vinegar added, till

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all is dissolved. The hot filtered liquid yields after refrigeration scale-like, crystalline laminæ, shining like mother-of-pearl, and very greasy to the touch; they are removed from the mother liquor, speedily washed with diluted spirit of wine and, after being dried between bibulous paper, preserved, well protected from light.

Triturations are to be made from it.

MERCURIUS BIIODATUS.

Mercurius iodatus ruber, Hydrargyrum biiodatum s. deutoiodatum s. periodatum, Deutoioduretum Mercurii, Iodetum hydrargyricum, Biiodas hydrargyricus, Acidum iodo-hydrargyricum. Biniodide of mercury.

Take eight parts of chloride of mercury, dissolve them in twenty times its quantity of hot distilled water and add in short pauses continually stirring ten parts of iodate of potash, previously dissolved in four times as much water. The fiery scarlet precipitate is sufficiently washed and dried with gentle warmth; it is insoluble in water, fuses easily, is volatile; in spirit of wine it is soluble.

Triturations are to be made from it.

MERCURIUS CORROSIVUS.

Mercurius sublimatus, Hydrargyrum muriaticum corrosivum, Bichloretum Hydrargyri, Chloretum Hydrargyricum. Sublimate corrosive of mercury, corrosive sublimate, bichloride of mercury, perchloride of mercury, oxymuriate of mercury.

It is best to purify this preparation bought from chemical establishments by re-crystallizing it, if it is to be used for medicinal purposes. Out of its concentrated and quickly evaporated watery solution it crystallizes in firm, long, acicular, pointed, truncated crystals, is inodorous and completely dissolvable in hot spirit of wine.

We prepare from it a solution with distilled water in the proportion of 1 : 19 and term this $1 = {}^{1}/_{20}$; from this the next attenuation is made with diluted spirit in the proportion of 2 : 8 (designated with 2); for all further attenuations strong alcohol is used in the decimal proportion.

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MERCURIUS DULCIS.

Calomel, Calomelas, Hydrargyrum chloratum s. muriaticum mite, Chloretum hydrargyrosum. Calomel, dulcified mercury sublimate, sweet mercury, chloride or protochloride of mercury.

Let four parts of pure bichloride of mercury be reduced in a glass or porcelain mortar, to a most subtle powder, moistening it with spirit of wine; then it is mixed by continuous triturating with three parts of pure mercury till all globules have disappeared perfectly.

The mixture is afterwards put into a small glass-subliming vessel, of such a size, that only one third may be filled. After having put this into a sand-bath in a proper dish and the mouth of its neck slightly stopped with a chalkstopper, the contents be sublimed with an at first moderate, later strengthened fire.

Let the product obtained be of a yellowish-white colour, near the glass silverlike shining; a gray cover of metallic mercury, would make a repeated sublimation necessary. The thin rinds easily to be taken out by speedy cooling and breaking the vessel, which show on the inner side pointed crystals, are to be triturated to a most subtle powder under water, and gradually washed. At last the obtained powder is repeatedly washed with spirit of wine under continual stirring till the spirit filtered off shows no trace of sublimate of mercury, and then dried.

There are triturations to be made of it, which like the preparation itself are to be preserved from the light.

MERCURIUS NITROSUS.

Hydrargyrum nitricum oxydulatum, Nitras hydrargyrosus. Protonitrate of mercury.

Twenty parts of pure mercury are poured over in a very flat porcelain dish with a mixture, consisting of nine parts of pure concentrated nitric acid of a specific gravity of 1, 2 and twenty seven parts of distilled water, and left standing slightly covered at a dark and cool place, until the formation of the white octahedral crystals, the salt required, has ceased. From time to time they are taken away from the surface of the mercury, upon which they float, washed quickly with spirit of wine and dried between bibulous paper; then they are preserved in a well-corked

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glass-vessel. They are persisting in the air, and perfectly soluble with slightly acidulated water. The best form for medicinal doses is the solution, which is to be prepared with water containing some drops of nitric acid, in the common proportion, and to be preserved in blackened glasses.

MERCURIUS PHOSPHORICUS.

Mercurius phosphoratus, Phosphas hydrargyrosus. Phosphate of mercury.

This nearly quite insoluble salt is obtained by decomposing a solution of nitrate of mercury in twenty times its quantity of water slightly acidulated with nitric acid, by adding phosphate of soda as long as a precipitate ensues.

Before the phosphate of soda is applied, one must be completely convinced of its being chemically pure, especially free from sulphate or muriate of soda and perfectly neutral; or else the precipitate will be adulterated with sulphate or muriate or black suboxide of mercury.

After finished precipitation and repeated careful washing it is a white powder, consisting of tender pointed crystals, rather tasteless, which is used for triturations after having been dried with gentle heat.

MERCURIUS PRÆCIPITATUS ALBUS.

Hydrargyrum ammoniato-muriaticum, Mercurius cosmeticus, Hydrargyrum muriaticum præcipitatum, Murias oxydi hydrargyri ammoniacalis, Oxydum hydrargyricum cum Chloreto Ammonii. White precipitate of mercury, ammonio-chloride of mercury.

This preparation is obtained by decomposing a cold, concentrated solution of sublimate of mercury by caustic ammonia, of which latter as long some is added, as the precipitate thrown down looks still completely white. This is washed with cold water, till the washwater is no longer made turbid by ammonia (for if the washing is continued too long the precipitate becomes yellowish by partly decomposition). Collected upon a filter, it is dried between bibulous paper by pressing, then dried completely with gentle warmth, secluding light, and preserved under the same caution; let it be a milkwhite, not too heavy powder, fit for being perfectly volatilized.

Triturations are made of it likewise to be preserved in blackened glasses.

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MERCURIUS PRÆCIPITATUS RUBER.

Hydrargyrum oxydatum rubrum, Oxydum hydrargyricum, Peroxydum hydrargyri. Red precipitate of mercury, Binoxide of mercury, mercuric oxide, red oxide, oxide, or peroxide of mercury, calcined mercury.

Red oxide of mercury of commerce, having been previously tested on account of its purity by perfect volatilization in an iron spoon, is reduced in a glass- or porcelain mortar, adding the necessary quantity of water to a most subtle, impalpable powder. Then much distilled water is added, and boiled under continual stirring for some time in a proper vessel. After short rest the water is poured off and the now orange-coloured powder is washed, till the washwater reacts no more sour. Collected upon a filter and dried in a dark place, it is preserved in vessels to be well protected against light.

The triturations to be made from it must likewise be protected from light, the preparation being very easy decomposed by it.

MERCURIUS PROTOIODATUS.

Mercurius iodatus flavus, Hydrargyrum subiodatum, Iodure-tum Hydrargyri, Iodetum hydrargyrosum. Protiodide, subiodide or green iodide of mercury.

The subiodide of mercury is to be prepared by rubbing together 8 parts of pure mercury, with 5 parts of iodine in a porcelain mortar, adding gradually some alcohol, until globules are no more visible in the mixture, and this has got a greenish-yellow colour.

After having removed the alcohol with gentle warming, the powder as well as the triturations to be prepared from it, are preserved in blackened glasses, well protected from light.

MERCURIUS SOLUBILIS.

Hydrargyrum oxydulatum nigrum, Oxydulum Hydrargyri salinum, Nitras ammonicus cum oxydo hydrargyroso. Ammonio-nitrate of Suboxide, or Dioxide of Mercury, black Oxide of Mercury, Protoxide of Mercury, mercurious oxide.

Take 3 parts of pure mercury, treat it with 4 parts of pure

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concentrated nitric acid of a sp. gr. of 1,28, previously diluted with 6 parts of water, augmenting the heat gradually until about 2 parts of the mercury are dissolved (which may be learned easily by pouring the fluid off and weighing of the not yet dissolved mercury); the hot solution is diluted with 12 parts of distilled water, as still warm filtered into a roomy vessel, containing four times as much cold, distilled water, exactly mixed with it, and now added a mixture consisting of $1\frac{1}{2}$ parts of aqueous solution of ammonia, having a specific gravity of 0,95, and 8 parts of distilled water, in such a manner, that the liquid ammonia is made to flow in a thin, continuous streamlet, the solution of mercury being stirred assiduously till both are properly mixed. After due settling of the black precipitate, the supernatant liquid is poured off as quick as possible, the precipitate mixed with distilled water, brought upon a filter, and perfectly washed upon it. The drying of it must be effected by pressing it between many sheets of bibulous paper and afterwards by exposure to free air, excluding both light and artificial warmth totally. In this way a velvet-black, subtle, tasteless powder is obtained, of always equal proportions in its composition, showing no metallic globules of mercury and perfectly volatilizing with heat. Let it be preserved in well closing, blackened glasses as well as the triturations made from it. *

MERCURIUS VIVUS.

Argentum vivum, Hydrargyrum. Metallic quicksilver, mercury.

A tin-white, bright resplendent metal, at common temperature always fluid, in the smallest parts as well as in greater quantities always taking the shape of globules, with the heat evaporating, having a specific gravity of 13,5.

For being convinced of its purity it is necessary to prepare the mercury from artificial cinnabar, by exposing it well-mixed with equal parts of pure iron filings to an open fire in an iron or earthen retort. The beak of the retort, which must be as long as possible, must reach the surface of the water to be put in the receiver, so that the vapours of mercury coming over with the heat

* The mercury contained in the liquid poured off first from the precipitate, may be separated apart by aqueous solution of ammonia, as long as the precipitate thrown down is of a slate-gray colour; it is collected and dried for occasional reduction of the mercury.

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strengthened at last, may enter into it immediately for being condensed. As soon as the labour is over the mercury is separated from the water, dried by rolling over quite soft bibulous paper laid in several sheets one above the other and then preserved in well-closing vessels.

Triturations are made from it, the first of which is to be continued, till the eye cannot perceive any more metallic globules even with the aid of the magnifying-glass. According to the quantity of mercury acted upon, more than one hour will be necessary for that purpose.

MEZEREUM.

Cortex Mezerei s. Thymelææ s. Laureolæ s. Cocognidii s. Coccignidii s. Chamelææ. Mezereon, Spurge-olive, Laurel-herb. From Daphne Mezereum L. Sex. Syst. Octandria Monogynia (Cl. VIII. O. 1.) Nat. ord. Thymelaceae. Brandt et Ratzeb. I. 8. Hayne III. 43. Düsseld. 125. Göbel. I. 19.

The small bush, 2 to 5′ high, is found all over Germany, especially in shaded, mountainous woods. The beautiful purple sweetscented flowers appear in March or April previous to the leaves, and form a spike at the end of the branches. The leaves form at first a top over the flowers, but develop later alternately, are lanceolate and entire. The bark of the trunk and the stronger branches has, when fresh, a greenish or reddish, when dried a brownish epidermis, with darker stripes and dots; below it is the yellowish-white, very fibrous bast. Its smell is insignificant; but its taste exceedingly acrid, pungent, lasting-long.

The bark pealed off in the beginning of spring before the flower develops, is fresh comminuted as fine as possible, and used for tincture after Rule 3, which has a yellow-brownish colour and a heavy burning taste, like Spanish flies.

MILLEFOLIUM.

Herba s. summitates Millefolii s. Achilleæ albæ s. Myriophylli. Milfoil, yarrow. From Achillea Millefolium L. Sex. Syst. Syngenesia Superflua (Cl. XIX. Ord. 2). Nat. ord. Compositæ. Hayne IX. 45. Düsseld. 246.

This plant, spread all over Europe, occurring on meadows,

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pasture grounds and roads in great quantities, is well known and needs no description.

We select the plants, during the summermonths when the flowering begins and the stems are not yet ligneous, from sunny, rocky, poor places and prepare from it an essence after Rule 2. It is of yellow-brown colour, not disagreeable smell, and bitter taste.

MILLEPEDES.

Aselli. Woodlice, hoglice, slaters, cockroaches, cheslips, tiler's lice, sow. From Oniscus Asellus L. Fam. Crustacea. Brandt et Ratzeb. II. 12.

The woodlouse is to be found everywhere in Germany, not only in cellars, but also in all moist places, preserved from sunlight, under large stones, on hedges and the like. The oblong body is black-green, below lighter and flat; above shield-shaped convex, composed of rings, covering each other like tiles. The last limb of the tail ends in a point; it has a great number of feet, with the aid of which it runs rather quickly; when touched it takes the form of a ball.

From the insects collected alive and immediately bruised a tincture after Rule 1 is prepared, being odourless and tasteless and of pale straw-yellow colour.

MOLYBDÆNUM.

Molybdenite, Sulphuret of Molybdena, black lead ore.

The sulphuret of molybdena occurs native in Granite, where it forms leadgray, crystalline-metallic resplendent masses or clumps composed of flexible lamins, greasy to the touch like graphite.

These lamins are separated with the aid of a knife from the rock, to which they stick loose, taking precaution that nothing strange be mixed with it, and used for triturations.

MORPHIUM.

Morphium purum. Pure morphia.

This alkaloid from opium ist best prepared in the following way.

One part of the best opium is comminuted, boiled for half an hour with four times its quantity of distilled water, and this

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process repeated two to three times, until all the opium has become a uniform pulp. The extracts obtained are mixed, inspissated to half their volume, then a boiling liquid consisting of $^1/_4$ part hydrate of lime and two parts of water is added, and boiled with it for a quarter of an hour, strained and pressed out. The residue now washed twice with $2^1/_2$ parts of water; all the liquids containing lime are inspissated until two parts remain, filtered and then $^1/_{10}$ part of sal ammoniac is added to the boiling liquid. Thus it is left to rest for 8 days in a cool place. The liquid separated from the precipitated pure morphia is again inspissated to half its bulk and likewise set aside to separate the morphia it still contains. The obtained morphia is dissolved in eight times its quantity of distilled water with the aid of some drops of diluted sulphuric acid; the solution is mixed with as much again of strong alcohol and this digested with some animal charcoal, filtered, and the filtration mixed with liquid caustic ammonia until it reacts clearly alkalic. After some days all the morphia will be crystallized out of the liquid; it is collected upon a filter, and washed upon it with distilled water. Should it not be quite white, the solution with water and alcohol and the whole process is to be repeated. Care is to be taken, that the solution of morphia to be purified by the animal charcoal be strongly acidulated, because the animal charcoal partly absorbs acids. The morphia obtained in this way is quite free from narcotine, the presence of which is detected, muriate of morphia being made turbid through a solution of carbonate of potash. It crystallizes in white, resplendent, transparent, rectangular obtruncated columns, persists in the air, is inodorous and has a bitter taste.

Triturations are made from it.

MORPHIUM ACETICUM.

Acetas Morphii s. morphicus. Acetate of Morphia.

It is prepared by dissolving pure morphia in diluted acetic acid until it is saturated, filtering the liquid and evaporating it with very gentle heat in flat dishes until the salt remains dry. The dried rather formless mass is powdered, and forms then a not quite white powder, smelling of vinegar, to be preserved in well to be closed vessels. Triturations as well as solutions with acidulated water can be made of it.

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MORPHIUM MURIATICUM.

Morphium hydrochloratum, Murias s. Hydrochloras Morphii s. morphicus. Muriate or hydrochlorate of morphia.

The morphia obtained after the method stated under the head "*Morphium purum*" from the decoctions of opium, is, after having been freed from the mother liquor by sufficient washing, diluted to its twentyfold quantity with water, and then added muriatic acid until it reacts slightly sour. Heated to boiling it is filtered when still hot and evaporated to a small quantity.

If necessary, its complete purity is attained by repeated dissolution and filtering over animal charcoal. It crystallizes in tender, colourless prisms, which are resplendent like silk, clustered and united; it is persistent in the air, and has a very bitter taste.

In the like manner, as has been stated in the last articles, triturations and solutions are to be made, if they are demanded for.

MORPHIUM SULPHURICUM.

Sulphas Morphii s. morphicus. Sulphate of Morphia.

It is prepared in quite the same manner as the muriate of morphia, by dissolving pure morphia in diluted sulphuric acid.

Its deportment, appearance and preparation are quite like those of the before mentioned.

MOSCHUS.

Moschus tunquinensis s. orientalis s. tibetanus. Musk. From Moschus moschiferus L. Cl. Mammalia. Ord. Ruminantia. Brandt et Ratzeb. I. 7—8. Martius Compend. of Pharmaceut. Zoology T. I—III.

A bag with the male animals, lying between the navel and the brush, oblong, set with long grey (or yellowish), ho low, stiff hair, standing in a circle, contains the reddish-brown mass, which is composed of irregular little clods, interwoven with very fine skins, shining like mother-of-pearl and slightly unctuous, soft, of an uncommonly strong (at the first often ammoniacal) not to be destroyed smell and taste.

It is always better to buy entire uninjured bags, and to empty

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them one's self, than to select the musk taken out (*Moschus ex vesicis*).

We prepare of it both a tincture with *diluted* spirit of wine in the proportion of 1 : 20 and triturations in the common proportion. *

MUREX PURPUREA.

The number of Seasnails, which yield purple (Fam. *Purpura L.*), so liked and valued in olden times, is very great, and they are found both in the Adriatic and the Mediterranean in large quanties.

It is not fixed, from which species the purple juice used for medicinal purposes is to be taken: therefore it seems, as if all are of the same value, and that it should be useless to enumerate one or the other species as its source.

The colouring juice is lodged in a bag between the heart and the liver, and does not always possess the fine red colour, when taken out, but appears as a tough, sticky, colourless or greenish liquid, reddening gradually when exposed to the air.

Hitherto the juice has been triturated with sugar of milk, the solution of the third trituration still colours the water fine rose-red, and keeps long time without being decomposed.

NATRUM CARBONICUM.

Alcali minerale aëratum, Sal Sodæ, Soda crystallisata, Natrum subcarbonicum, Carbonas s. Subcarbonas natricus cum Aqua.
Carbonate or subcarbonate of soda, Sodasalt, crystallized carbonate of soda.

The crystallizable carbonate of soda of commerce is dissolved in boiling water to saturation, the solution filtered when still hot, quickly cooled under stirring, and the pap obtained, consisting of small crystals, so long poured over with small quantities of cold water upon a funnel, till the liquid running off, when previously saturated with nitric acid reacts neither on muriatic nor sulphuric

* That all vessels and utensils required hereby, exclusively are applicable for this substance only, is well known. But it must be borne in mind that any work relating to it, must be done outside of the homœopathical shops (at best in the open air), and that also all preparations of musk as well as all utensils required for them must be preserved in a drawer closing tight and well, quite separated from the shop.

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acid. The saltish, quite white powder is to be dried quickly between filtering paper and in not too warm air, and to be preserved in duly closed vessels, for obviating its decomposition.

A solution containing 10 per cent is made from it.

NATRUM MURIATICUM.

Alkali minerale muriatosum, Sal culinaris s. marinus s. Gemmæ, Natrum hydrochloricum, Natrium chloratum, Chloretum Natrii s. natricum. Common salt, culinary salt, muriate or chloride of soda.

The common culinary salt is purified, after having been rubbed into a subtle powder, by repeatedly continued washing with distilled water, till the liquid running off shows no indications of earthy salts or sulphates: the residue is dissolved in three times its quantity of pure water, filtered and set aside for crystallization, where it shoots on in the form of small, hollow pyramids, of which frequently several appear accumulated over each other. Let it be perfectly white, not becoming moist in the air, and dissolvable in three times its quantity of water, yielding a clear liquid.

A watery solution containing 10 per cent is made from it.

NATRUM NITRICUM.

Nitrum cubicum s. rhomboidale, Nitras natricus s. Sodæ. Cubical nitre, saltpetre from Chile, nitrate of soda.

The salt bought from druggists is purified by re-crystallizing and applying, if necessary the reagents mentioned under the head "*Kali nitricum*". From the filtrated and pretty well concentrated solution it shoots into cubic, pellucid crystals.

From it also a solution in the common proportion is to be made.

NATRUM SULPHURATUM.

Natrium sulphuratum, Bisulphuretum Natrii. Liver of sulphur prepared from soda, sulphuretted soda, sulphuret of soda or sodium.

Equal parts of carbonate of soda and pure sulphur, both free from water and well mixed, are fused with moderate heat and con-

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tinual stirring, in a covered earthen crucible, till they are united into a perfectly uniform, tough, liver-brown mass, dissolving itself, a slight turbidness excepted, easily and perfectly in water. Poured out and powdered when still warm, it must be preserved quickly in well closing vessels.

We prepare from it, however in small quantities, a solution with diluted spirit of wine to be kept for a short time, which must be protected carefully from light and access of air; and is to be made anew when no more completely clear.

NATRUM SULPHURICUM.

Alkali minerale sulphuricum s. vitriolicum, Sal mirabilis Glauberi, Sulfas natricus s. Sodæ. Sulphate of soda, vitriolated soda, cathartic salt of Glauber.

The purification of this salt bought from chemical establishments is effected in the like manner as that mentioned about *Natrum carbonicum*, preventing the formation of larger crystals in the filtered solution by stirring. If the solution should be sour, the acid is to be removed by adding carbonate of soda. Treated in this way there is no difference between this salt and the carbonate of soda in the outer appearance; it is very white, and falls easily into powder, wherefore it must be dried speedily and preserved in air-tight vessels.

Solutions in the common proportion are prepared from it.

NICCOLUM CARBONICUM.

Carbonate of Nickel.

Nickelore (regulus of cobaltum) reduced to a subtle powder is dissolved in moderately strong nitric acid with the aid of warmth; the solution, being a little acid, is diluted with five times its quantity of water and filtered. By throwing through it hydrosulphuretted gas, arsenic and bismuthum are separated, and now caustic potash in excess is added to the solution again filtered, for separating iron, so that by the appearing of green flakes oxide of nickel becomes cognizable. The whole liquid is now boiled for 20 to 30 minutes, and if green flakes of nickel still appear, one may be convinced that all iron is removed. The solution is now separated from the deposit by filtering and the oxide of nickel precipitated by caustic potash, so that a little of it may remain in the solution, which after stirring and settling still appears a little green. The

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liquid is boiled standing over the precipitate, and all oxide of cobalt will be again dissolved leaving a precipitate of pure oxide of nickel.

This oxide is dissolved again in pure nitric acid for preparing the carbonate; it is diluted, filtered and the oxide separated from the beautiful emeraldgreen solution by bicarbonate of soda. The light apple-green precipitate is well washed, dried slowly in the shade and preserved in well-closed vessels. It is a pale grayish-green, impalpable, nearly insipid powder, of which triturations are to be made.

NUX MOSCHATA.

Nuces moschatæ s. nucistæ s. aromaticæ, Nuclei Myristicæ. Nut-megs. From Myristica moschata L. Sex. Syst. Dicœcia Monadelphia (Cl. XXII. O. 8.) Nat. ord. Myristaceæ. Düsseld. 133.

The well known, sweetscented fruit must feel heavy and greasy, when pricked with a hot needle, a yellowish, sweetscented oil must issue, and when cut through it must not be crumbled and neither worm-eaten nor hollow.

We prepare a tincture from it after Rule 1, which is of yellow colour and the known agreeable smell and taste.

NUX VOMICA.

Poison nut. From Strychnos nux vomica L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Apocyneæ. Hayne I. 17. Düsseld. 209.

The kernels of the mônolocular, yellow-red berries of this tree, indigenous to the East-Indies, and very conspicuous, are in the form in which they come to us, circular, 8 to 10‴ in diameter, 1 to 2‴ thick, smooth, often a little crooked, thicker at the margin than in the middle, concave at one side, convex at the other, like a small dish, set with thick silklike shining hair in a circle. The yellow-white kernel consists of two hornlike seedlobes of faint, peculiar smell and exceedingly bitter, long-lasting taste.

It contains Brucia and Strychnia, which must be acknowledged as the more efficacious constituents of the poison nut.

The nuts are cut with a root-cuttingknife into very thin slices which, after having been dried previously with a gentle heat, may be reduced easily into a sufficiently subtle powder, and then

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extracted for tincture after Rule 1; this tincture has a vivid straw-yellow colour and very bitter taste. *

NYMPHÆA LUTEA.

Radices Nymphææ luteæ, Nuphar s. Nenuphar luteum. Nenuphar, yellow water-lily sea-flower. From Nymphæa lutea L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Nymphææ. Hayne IV. 36.

In stagnant waters, especially deep, large fish-ponds, the large heartshaped, entire, smooth, vividgreen leaves appear floating on long, obtuse-triangular petioles. The beautiful yellow flowers, of agreeable odour, on round scapes stand just out above the water; its sepals are hollow, coloured, far greater then the petals.

The root is not seldom as thick as a fore-arm, several feet long, branched, bent hither and thither, fleshy- spongious, rugged, yellow-brown or earth-coloured. It is taken out of the bottom fresh in June, and prepared for essence, which has a pale straw-yellow colour and little taste.

ŒNANTHE.

Œnanthe, Hemlock-dropwort, aquatic filipendula, marshy parsley. From Œnanthe crocata L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ.

This plant is indigenous to England, Sweden, France and Spain, in moist places and swamps, and distinguished by a milky juice which is contained in all its parts, and turns quickly saffron-yellow in the air. The root consists of 4 to 6 oblong, fleshy tubers; the stem attains a height of 5′, the leaves are all bipinnate cleft, the umbels very extended, having 15 to 30 rays, its involucres and involucels formed of many leaflets. From the fresh roots collected during the flowering period in June and August an essence is prepared after Rule 2, or if these were not to be had a tincture is made after Rule 1 from dry roots with diluted spirit of wine. The colour of the essence is yellow-green.

* The powder of commerce is as little to be used for medicinal purposes as the kernels which are inside gray or specifically light.

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OLEANDER.

Oleander, rose-bay, rose-laurel. From Nerium Oleander L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Apocyneæ. Brandt et Ratzeb. I. 20.

A perennial, evergreen bush, growing wild in South Europe, Asia Minor and North Africa near rivers, and cultivated with us as an ornamental plant. With us it is mostly reared in the form of a tree, always ending in tripartite branches, with erect leaves, which are 3 to 5″ long and 6 to 12‴ broad, darkgreen, above shining, leatherlike, the midrib of which juts out strikingly. The flowers standing at the ends in cymes, are inodorous, funnel-shaped, rose-coloured or milk-white.

From the leaves plucked at the beginning of the flowering period we prepare a tincture after Rule 3, being of dark brown-green colour.

OLEUM ANIMALE.

Oleum Cornu Cervi rectificatum, Oleum animale Dippelii s. æthereum. Rectified oil of horns, Dippel's animal oil, rectified animal oil, ethereal or essential animal oil.

It is obtained by repeated slow destillation of the fetid animal oil, ***Oleum animale fœtidum s. Cornu Cervi fœtidum*** at a very gentle fire. It is to be observed, that 1. by filling the glass distilling vessel (an alembic with a head of glass is the best) its sides may not be soiled, 2. the distillation is not continued too long, and 3. that when the distillation is repeated another vessel is to be applied, and three to four times as much pure water added. Let the production be limpid, nearly colourless, highly volatile and of a very light specific gravity, having a penetrating animal-empyreumatic, but not quite disagreeable smell, which last re-appears as soon as the oil, changing its colour from light into yellow and darkbrown, and losing its specific lightness, becomes spoiled. It is to be preserved in very small, blackened vessels, provided with well-closing glass-stoppers, and perfectly protected from access of light and air.

We prepare a solution of it with strong alcohol in the known proportion, to be preserved with the like care as the pure oil, and renewed, if it appears no more limpid and colourless. *

* Duflos remarks, that the essential animal oil, when again rectified, and some phosphoric acid is added, becomes not brown, even when preserved for a longer

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OLEUM TEREBINTHINÆ.

Spiritus s., Essentia Terebinthinæ gallicæ. Oil or spirit of turpentine.

All species of Pinus yield the thickly fluid balsam of different purity and goodness known under the name of turpentine, from which the essential oil is produced in large quantities by distilling it with water. It is limpid, scarcely shining yellowish, very volatile, of penetrating peculiar odour and hot taste.

For medicinal use we purify the best French oil again by slow destillation over water in a glassretort, and then it appears to be perfectly white, of much less hot smell, but more volatile than before. If not preserved in small glasses and protected from the influence of light, it turns soon again resinous, coloured and smelling bad. *

Form of medicine like that stated unter the head of *"Oleum animale"*.

ONONIS.

Radices Restæ bovis s. Remoræ aratri s. R. alopecuroidis s. R. urinariæ. Rest-harrow, cammock, petty-whin, fin. From Ononis spinosa L. Sex. Syst. Diadelphia Decandria (Cl. XVII. O. 4). Nat. ord. Leguminosæ. Hayne XI. 43. Düsseld. 324. Göbel II. 28.

This shrublike plant is spread over the greater part of Europe, in waste grounds, on dry, grassy places, near roads and balks. The perennial root is manyheaded, running far, outside dark red-brown to yellow-brown, internally white, ligneous, hard, tough, inodorous, of mucous, afterwards a little astringent taste. It sprouts forth several stems, which are 1 to 2′ high, erect or half creeping, very branched, round, as thick as a quill, ligneous-stiff, with small, petiolate, ovate-oblong, serrated, partly nearly smooth, partly villous, alated leaves. The thorns, 1 to 2″ long, straight and

time. In as much as he finds the cause of the colouring in ammonia contained in the oil, which would be combined by that addition, and also retained, the application of that means may not appear to be recommendable, since it brings about a change in the essential constituent of it.

* The nature and speedy decomposition of both these essential oils makes appear the former manner of preparation (triturations with sugar of milk) improper and therefore to be rejected.

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stiff, stand axillary between the leaves and branches. The violet-red or flesh-coloured flowers, appear at the upper part of the branches, stringed above each other, from June till August.

The root to be collected in spring before the flowering-time is to be prepared fresh for tincture after Rule 3, which is of a red-brown colour. In the cold it gets a gelatinous consistency.

OPIUM.

Opium crudum s. thebaicum, Laudanum, Meconium. Opium. From Papaver somniferum L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Papaveraceæ. Brandt et Ratzeb. I.43. Hayne VI. 40. Düsseld. 405.

It is the dried milkjuice of the unripe poppy-heads. The best sort of Opium is brought to us in large, irregular cakes or loaves, 1 to 1½ pound in weight, covered with poppy-leaves, outside dry, pretty hard, inside softer (becoming still softer by pressing between the fingers), of yellowish-lightbrown colour, developping very strong the known peculiar, benumbing smell of opium, and of a nauseous-bitter, afterwards a little acrid taste.

We prepare with *diluted* alcohol a tincture from it after Rule 1 which has the odour and smell as well as the colour of the opium in a considerable degree.

OREOSELINUM.

Herba Oreoselini s. Apii montani s. Petroselini montani s. Polychrestæ s. Veelguttæ. Small wild parsley, small mountain parsley, stone parsley. From Athamanta Oreoselinum L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Hayne VII. 3. Düsseld. 291.

This plant, occurring on loose meadows, hills and slopes nearly over all Europe has tripinnate, long-petiolate root-leaves, lying squarrose spread, often revolute upon the ground. The stem-leaves consist of broad, skinny leafsheathes, at the end of which small, very imperfect leaves are developped. The umbels stand at the top of the long, naked stems, which are 1 to 3′ high, they are compound, many-rayed, flat. The common and special involucres are many-leaved, revolute, the flowers white, of equal size, the whole plant of agreeable aromatic smell and taste, nearly related to common parsley.

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In the month of May we collect the fullgrown root-leaves, and prepare from them an essence after Rule 2, which is of the smell and taste of the plant described above.

PÆONIA.

Radices Pæoniæ s. Pæoniæ. Male and female peony. From Pæonia officinalis L. Sex. Syst. Polyandria Digynia (Cl. XIII. O. 2). Nat. ord. Ranunculaceæ. Hayne V. 26. Düsseld. 397. Göbel II. 15.

The root of this sufficiently known and liked ornamental plant of our gardens is dug out in the first beginning of spring, immediately after the development of the leafbuds; and from them an essence is prepared after Rule 2, which after short time gets a fine red colour, similar to that of the flower, but is decomposed easily by light.

PARIS.

Herba Paridis s. Solani quadrifolii s. Aconiti salutiferi. True love, one-berry, herb paris. From Paris quadrifolia L. Sex. Syst. Octandria Tetragynia (Cl. VIII. O. 4). Nat. ord. Smilaceæ. Brandt et Ratzeb. I. 6. Hayne III. 7.

This small perennial spread over the greater part of Europe occurs in shaded and moist woods. It sprouts from a creeping, articulate root, as thick as a quill, a simple, round stem, 8 to 10″ high, smooth, having only at its end four verticillate, ovate-pointed, short-petiolate, smooth and entire leaves. The greenish-yellow, four-petaled flower appears on a one-flowered peduncle, coming out from the middle of the leaves, and leaves a darkblue shining, nearly round berry as large as a pea.

At the flowering time from April to June the whole plant along with the root is gathered and an essence prepared from it after Rule 2, which has a green-yellow colour and bitterish taste.

PETROLEUM.

Oleum Petræ s. Terræ, Bitumen liquidum, Naphtha Petræ s. Petrolei. Rock-oil, petroleum, Barbadoes tar, mineral tar.

The common rockoil occurs in drug-commerce of different purity and colour. We select the most volatile and light coloured,

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called *Oleum petræ album*, and purify it by distillation over water out of a glassretort in the same manner as oil of turpentine; it will be then perfectly colourless, nearly insipid and inodorous (smelling somewhat like bitter almonds) and very volatile.

Solution in the known proportion is made from it with *strong* alcohol.

PETROSELINUM.

Semen Petroselini s. Apii hortensis. Common parsley, garden parsley. From Apium Petroselinum L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Hayne VII. 23. Düsseld. 283.

This plant, everywhere known and cultivated as a culinary plant, is indigenous to the South of Europe. The biennial, spindle-shaped, fleshy root sprouts forth stems 2 to 4′ high, smooth, striped, with long, thin branches; the leaves are bi- to tripinnate, smooth, dark green, *not shining*. The greenish-yellow small flowers appear in umbels standing at the end. The fruit consists of two seed-grains lying one upon the other, having the shape of anise and a strong, aromatic odour and taste. In August or in general when the seeds are fully ripe *these* are prepared for tincture after Rule 1. It is of pale yellow-green colour and has odour and taste of the plant very strong.

PHELLANDRIUM.

Semen Phellandrii s. Fœniculi aquatici s. caballini. Water phellandrium, fine-leaved water-hemlock. From Phellandrium aquaticum L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Hayne I. 40. Düsseld. 281.

The perennial plant is found near waterditches, swamps, and ponds all over Europe. The seeds furnished from druggists are oblong, ovate, a little compressed, striped, light-brownish or yellowish-green, of extremely strong, nauseous-aromatic odour and similar, bitter, acrid, oily, long-lasting taste.

We use them for preparing a tincture after Rule 1 which is of lightbrown colour and has odour and taste of the seed.

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PHOSPHORUS.

Brand's or Kunkel's phosphorus.

Take a piece of pure phosphorus free from arsenic and oxide, and pour over it in a strong medicine-glass twenty times its quantity of *strong alcohol*, stop the glass slightly with a corkstopper and keep it in a vessel filled with hot water, till the phosphorus is fused. Then take it out of the water and agitate it continually, closing the vessel with a finger, till the phosphorus is divided in innumerable little balls and this have again become hard. The phosphorus subtlely divided in this manner remains with the alcohol for fourteen days in the glass, well closed, and dayly oftentimes heavily agitated. The tincture is then filtered off and to be preserved in a blackened glass over some thin slices of phosphorus protected as well as possible from the rays of light. It is colourless but has a strong odour and taste of phosphorus, and develops, when poured upon one's hand, vapours of phosphorus, whereas it becomes milky, when mixed with water and agitated. It must not react sour, also not be kept in large quantities, but ought rather often to be prepared afresh.

ÆTHER PHOSPHORATUS

is prepared quite in the same way with sulphuric ether free from water; the only difference is, that the phosphorus is not comminuted with ether, but with hot water, which is separated by filtering as soon as the phosphorus is again hard. *

PHYTOLACCA.

Herba Phytolaccæ. Kermes. From Phytolacca decandra L. Sex. Syst. Decandria Decagynia (Cl. X. O. 6). Nat. ord. Phytolaccæ.

The very conspicuous plant, indigenous to Virginia, Switzerland and the countries near the Adriatic, is also cultivated in our gardens. The branched, pretty thick trunk attains a height of 5 to

* Phosphorus occurs often containing arsenic, therefore one must be certain about this before it is used, which is done in the manner stated under the head "Acidum phosphoricum". If no phosphorus free from arsenic should be at hand, it must be prepared from pure phosphoric acid by way of reduction.

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7', the ovate-lanceolate leaves, 8 to 12'' long, entire, and beautiful green, stand scattered. The white or reddish, peduncled flowers appear in July and August at the end of the branches, opposite to the leaves in racemes 3 to 6'' long. The quinquepartite concave lasting calyces are transformed with the flatpressed, furrowed ovary into a berry as large as a pea, being at first green, when ripe dark purple, containing much dark carmine-red juice. In October, the time of full ripeness, the leaves are used for preparing an essence after Rule 2.

PICHURIM.

Fabæ Pichurim s. pichuriæ majores s. Pecurim s. Sassafras s. Brasilienses, Nuces Sassafras. Sassafras nuts, Pichurim bean, Nutmeg bean, Brazilian bean. From Nectandra Puchury major Nees. Ocotea Puchury major Mart. Enneandria Pentagynia (Cl. IX. O. 5). Nat. ord. Laurineæ (Lauraceæ).

The large tree from which these seeds come, is found in the woods of the Brazils. They are the seedlobes taken out of the fleshy berry and dried over fire. They form oblong, half beans, about 2'' long, at the inner side flat or a little concave, at the outer side convex, covered with a wrinkly skin, compact, hard, yellowish-brown, at the inner side reddish-brown, of agreeable, but not too strong smell, similar to nutmeg or sassafras and of like aromatic taste.

In the same manner as from other seeds a tincture is prepared from them after Rule 1, which is of light brownish-yellow colour and has the taste and smell above described.

PIMPINELLA.

Radix Pimpinellæ albæ s. nostratis s. umbelliferæ s. hircinæ, Radix Saxifragæ s. Tragoselini. Burnet-saxifrage, stone-break. From Pimpinella Saxifraga L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Umbelliferæ. Göbel II. 27. Hayne VII. 20. Düsseld. 173.

This plant, spread all over Europe, growing also wild in the North of Asia, is found on dry, rocky places, on the edges of fields and woods, heaths, pasturages and on hills. It sprouts one stem, seldom more, being erect, branched, striped, smooth or slightly haired, 1 to 2' high. The root-leaves consist of 5 to 7, sessile,

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ovate-oblong-obtuse, inequally dentated, pinnate leaflets, on long petioles, sheathlike at the base. The not numerous leaves of the stem are pinnate, with incised pinnated leaflets and become gradually smaller towards the end of the stem; all are smooth, above dark green, below pale. The many-rayed, many-flowered umbels have no involucres, the petals are of equal size and white.

The spindle-shaped root is many-headed, 3 to 6″ long, above to 1″ thick, decreasing towards below, mostly obtruncated; it is deep and bent, has longitudinal wrinkles, is crooked, sometimes contorted, set with many ring-shaped knobs, of dim yellow or brownish colour; when cut through, the loose, spongy, whitish medullary string shows itself surrounded by a ring of little yellowish or brownish holes. The smell is nauseous-aromatic, very strong, the taste pungent acrid, causing long lasting saliva, and a harsh taste in the throat.

The root, to be gathered in spring from dry places, is used for preparing a tincture after Rule 3, which has very strongly the smell and taste above described, and is of a brownish-yellow colour.

PINUS SYLVESTRIS.

Strobuli s. Coni s. Turiones Pini. Pine-shoots, Pine-buds. From Pinus sylvestris L. Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Coniferæ. Düsseld. 80.

This sufficiently known tree, most certain to be distinguished from the fir species related to it, by its long needle-shaped leaves, being in pairs united in a short whitish, skinny sheath, is to be found all over the North of Europe and Asia, where it forms the most excellent forests. The young shoots or sprouts appearing at the ends of the branches in spring (therefore formerly called quite falsely *coni*) are oblong cylindric, 1 to 2″ long, 3 to 4‴ thick, covered with red-brownish, lanceolate scales, which are very rich in rosin, of agreeable aromatic strong odour and taste.

In the month of May they are gathered for preparing an essence from them after Rule 3, having the properties above named and a dark green-brown colour.

PLATINA.

Platina del Pinto, Platinum. Platinum.

For obtaining platinum in the form of powder let the thinnest

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platinum wire be selected, this being prepared from the purest metal. It is cut in very short pieces, and poured over in a small glass-retort with 4 to 6 times its quantity of concentrated nitro-muriatic acid, to which a proper receiver is adjusted without any lute. By the aid of the flame of spirit the liquid is heated to boiling, and kept so, as long as an influence of the acid upon the metal is perceived. When this has ceased the deep yellow-brown solution is separated from the metallic residue, and upon the last again a proper quantity of fresh acid is poured. The process is repeated until all the metal is dissolved, but care is to be taken to get a solution as neutral as possible, and to let rather a little residue of metal undissolved, than to add acid in excess. The solutions mixed, are then diluted in a sufficiently roomy vessel with ten times as much water, and decomposed by adding so long from a concentrated solution of sal ammoniac, as a lemon-yellow precipitate still appears. This is collected upon a filter, washed repeatedly with diluted spirit of wine, well-dried, and then put into a small, but wide glass-alembic with a long neck. In this it is cautiously heated to glowing, till the yellow powder is changed throughout into a steelgray, dim, lustreless mass (called spongeous platinum). The platinum ammonia being very volatile, it is necessary to stop the neck of the vessel loosely with a chalk-stopper and to lay the alembic as oblique as possible.

The production obtained, is pure platinum in the form of powder, to be used for triturations.

PLATINA MURIATICA.

Chloras platinicus. Muriate of platinum, chloride of platinum.

The solution of platinum mentioned in the preceding article is evaporated with moderate heat, till the platinum is dry, and taking care to prevent decomposition. It will be a dark brown-red saltmass, to be dissolved in nine times its quantity of water, and which is preserved (being termed *Platina muriatica* 1) for preparing from it further attenuations. Here also cork-stoppers are to be avoided.

PLUMBUM.

Saturnus of the alchemists. Lead, pure, metallic lead.

For comminuting the soft lead, so liable to oxidizing in me-

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tallic form into a powder as subtle as possible, the best way is the galvanic process of reduction. For this purpose one part of pure crystallized sugar of lead is dissolved in a hundred parts of distilled water, and 4 to 6 ounces of this solution are brought in contact with some of the bars of pure East India zinc, mentioned under the head *Cadmium**, in a porcelain dish, putting them into the solution. The decomposition begins immediately and continues as long as acetate of lead is in the solution for being reduced. — If this process shall succeed, the following rules are to be observed: 1) that the lead precipitated is often to be scraped off from the bars, or otherwise large lamels would be formed which would not yield a subtle powder. 2) That the mother liquor now containing acetate of zinc is poured off as soon as one perceives the reduction-process to be at an end, and that now solution of sugar of lead is poured over the bars anew. 3) That as soon as the whole process is finished the precipitated lead, being a loose, porous, dark gray mass, still coherent in little lumps, is speedily washed with hot distilled water, whereby however *all mechanical pressure is to be avoided*, this easily causing an injurious union of the soft mass to hard globules. 4) That the precipitate is collected upon a filter, as soon as the wash-water runs off clear, the water adhering to it is dislodged by pouring over strong spirit; at last the liquid is as well as possible removed by *moderate* pressing between the fingers, and the metal now taken from the filter pressed between several layers of bibulous paper so often with the hand, that it sticks no more to it; finally the complete exsiccation is effected by slight trituration in a warmed porcelain mortar. In this way a lustreless leadgray, and, if the process was managed with attention, quite subtle powder to be used for trituration, is obtained.

PLUMBUM ACETICUM.

Saccharum Saturni, Acetas plumbicus crystallisatus. Salt or sugar of lead. Acetate of lead.

The well know salt of lead, bought from chemical establishments, is purified by dissolving it in distilled water and re-crystallizing, adding to the solution $^1/_{12}$ of the salt, distilled vinegar and letting it be in contact with strips of metallic lead for some days, be-

* Compare the note of the article *Cadmium* p. 72.

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fore it is set aside for crystallization, for the purpose of separating any parts of copper possibly extant. For medicinal use let be applied only the first crystals shooting on, which, when formed slowly, appear in large, smooth, foursided prisms, having a white colour, shining like mother-of-pearl, sweetish-vinegarlike odour, and sweet, afterwards astringent taste; they are not persistent in the air.

We prepare from it a watery solution in the common proportion, but which must be always preserved in well-closed glasses, access of air separating oxide of iron. Triturations made from this salt are besides as well admissible.

PLUMBUM CARBONICUM.

Magisterium Plumbi, Cerussa, Carbonas plumbicus. Ceruse, white lead, carbonate of lead.

Though there is no want of pure ceruse from manufactories, yet we prefer to prepare this remedy ourselves. It is obtained by decomposing a diluted solution of pure acetate of lead with carbonate of soda. The loose, dazzling-white precipitate is carefully washed, collected upon a filter and dried with moderate heat. It is a heavy, but loose, very subtle and white powder, of which triturations are made.

PODOPHYLLUM.

Duck's foot. From Podophyllum peltatum L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Pæonieæ.

This perennial plant, indigenous to North America, is also met with in the botanical gardens of Europe. The long, very extended tuberous root, is set with long fibres, of externally brown, internally yellowish-white colour. The erect, single, and naked stem grows as high as a hand and above. The leaves are shield-shaped, nerved, divided in 5 to 8 unequal, grossly dentated lobes. The large campanulate, white flowers, hang single in the axils on peduncles 1″ long. The calix has three sepals, the corolla is nine-petaled. The fruit is a greenish-yellow unilocular berry of the size and shape of a hip.

We apply the root for preparing a tincture after Rule 3.

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PRUNUS PADUS.

Cortex Pruni Padi s. Cerasi racemosi s. Cerasi Padi. Common bird cherry. From Prunus Padus L. Sex. Syst. Icosandria Monogynia (Cl. XII. O. 1). Nat. ord. Rosaceæ. Göbel I. 20. Hayne IV. 40. Düsseld. 317.

The conspicuous, sometimes treelike bush is spread all over Europe and known as an ornamental plant. Its petiolate leaves, to 2″ long, ovate, obtuse-pointed, and serrato-dentated, stand alternately. The very sweetscented, white flowers appear in numerous, distant, 4 to 6″ long racemes, and leave round, shining black, juicy berries, as big as a pea.

We make use of the bark, peeled off in spring from the younger twigs before the flowers begin to bloom, which fresh is outside greenish-red, smooth, somewhat grained, and set with small white warts like dots. The inner side looks brownish-yellow, becoming darker afterwards: its smell is benumbing, similar to bugs, like cherry laurel.

From it a tincture is prepared after Rule 3, having a dark-brown colour and the above-mentioned taste and smell.

PRUNUS SPINOSA.

Flores Acaciarum s. Acaciæ Germanicæ s. Acaciæ nostratis. Common black thorn, sloe bush, German acacia. From Prunus spinosa L. Sex. Syst. Icosandria Monoygnia (Cl. XII. O. 1). Nat. ord. Rosaceæ. Hayne IV. 44. Düsseld. 320.

This bush, growing wild all over Europe in hedges, on the edges of woods and near roads, is quite well known, and blooms early in spring, before its leaves are developped. The white flowers stand single or in pairs at the sides and axils of the branches so tight, that they often quite cover them, and are sweetscented like bitter almonds. Fully blown-up, and gathered during dry weather, they are used for tincture, prepared after Rule 3, which has dark-yellow colour, and odour and taste of the flowers.

PULSATILLA.

Herba Pulsatillæ nigricantis s. minoris s. Anemonis pratensis. Meadow anemone, wind flower, campana. From Anemone pra-

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tensis L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7 [6]). Nat. ord. Ranunculaceæ. Brandt et Ratzeb. I. 31. Hayne I. 23. Düsseld. 392.

The small or true meadow anemone is found on sunny elevated places and pasture-grounds where the soil is sandy, also in clear pine-forests in Central and Northern Europe. The leaves, only imperfectly developped before the floweringtime, stand at the root, petiolate, bipinnate; from the crown of leaves lying upon the ground rises the round flowerscape, which is 3—6″ long, straight and leafless, at the top of which the beautiful campanulate, black violet-brown flower appears, whose six petals are a little narrowed at the points and then revolute; it is pendulous during the flowering time. The sessile involucre consists of three, manyfold linear-lanceolate pinnate-cleft leaflets, at first sitting tight under the flower, later by elongation of the peduncle standing remote; the whole plant is set with many, soft, silklike, white hairs, and has a woolly, lax appearance. It is odourless, but shows when bruised a most acrid vapour, causing many tears. The *Anemone Pulsatilla* to which it is very similar, distinguishes itself by more hair, much more shaggy scape, curved above, by its flower which is nearly *only half as big and pendulous*, of much darker colour and has the petals at the point bent backwards.

In the flowering time in the month of April the whole plant is gathered without the root and immediately used for preparing a tincture after Rule 3, being of light greenish-brown colour and burning taste.

RANUNCULUS ACRIS.

Meadow crow-foot, small butter-cup. From Ranunculus acris L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7. [6]). Nat. ord. Ranunculaceæ. Brandt et Ratzeb. I. 32.

This perennial meadow-plant is common to plains and on mountains, on the Alps, to the boundary of snows all over Europe. The root-stock, as thick as a quill, running slant, is set tight with filiform, whitish fibres, several inches long; the root-leaves are hand-shaped-divided, the segments nearly rhombic, deep incised, dentate; the stem-leaves are smaller, the topmost tripartite with linear segments; the stem, 1 to 2′ high, is erect, branched, striped, and has the shining goldyellow flowers at the end of the branches on round, not furrowed peduncles; on the naked receptacle

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of which the compressed, margined seed envelopes with a small somewhat crooked beak follow.

In May and June, the whole blooming plant is gathered and used for preparing essence after Rule 2, the colour of which is brown-yellow and which has an acrid taste.

RANUNCULUS BULBOSUS.

Bulbous-rooted crow-foot or buttercup. From Ranunculus bulbosus L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. [6] 7.) Nat. ord. Ranunculaceæ.

It is spread over all Europe on dry meadows and pastures, near roads and in vineyards. From the many species related and similar to this numerous family of plants it is distinguished by the brownish-yellow and villous calyx leaflets, half bent backwards, and pressed to the peduncle, as well as by its round tuberous root, which has great similitude to the common little radish (*Raphanus sativus*), only that the first is set at the base with fibrils in a circle. Besides the whole plant with its numerous, long-petiolate root leaves, nearly forky-branched tubular stems and the alternate short-petiolate stem leaves, is set with rough hair. The shining dark-yellow flowers belong to the largest of this genus.

In June the roots alone are gathered from the flowering plant; they spread, when bruised, an acrid, irritant vapour and are used for tincture after Rule 3, being similar in odour and smell to the precedent.

RANUNCULUS FLAMMULA.

Herba Flammulæ. Small or burning crow-foot, marsh buttercup. From Ranunculus Flammula L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7 [6]). Nat. ord. Ranunculaceæ. Brandt et Ratzeb. I. 33.

A sort of buttercup growing on moist meadows, near rivulets and on marshes, especially in the mountainous parts of Germany, the articulate, creeping root of which sprouts forth stems, one or more feet high, prostrate at the base, hollow, naked, often striking roots. The alternate leaves are entire or dentated, the lower petiolate, the upper ones clasping, all naked. The small numerous yellow flowers stand single at the side and top, on long round pedicels and leave smooth, roundish seed-envelopes.

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During the flowering time in the summermonths the whole plant without the root is prepared for essence after Rule 2, similar in colour and acrid taste to the former.

RANUNCULUS SCELERATUS.

Herba Ranunculi palustris. Marsh crow-foot or buttercup, blistering crow-foot. From Ranunculus sceleratus L. Sex. Syst. Polyandria Polygynia (Cl. XIII. O. 7 [6]). Nat. ord. Ranunculaceæ. Brandt et Ratzeb. I. 32.

Spread over all Europe, this plant has its place at the edge of stagnant waters, on marshy dikes, moist meadows and at the borders of small rivers in rich soils. Among all species of crow-foot this is distinguished by its high, coniform receptacles, which overtop by far the very small pale-yellow petals. The branched stem is 1 to 2′ high, is tubular-thick, angulate-furrowed; the long-petiolate root-leaves, are 3 to 5 lobed, and form a circle; the clasping stem-leaves are short-petiolate, alternate, tripartite. The whole plant is naked, greasy-shining, only sometimes slightly set with downy hair. The flowering period lasts from July to September, during which time the plant, like the other species of crow-foot, is prepared without the root for essence, which is of a light yellow-brown colour and burning taste.

RAPHANUS.

Radix Raphani nigri s. hortensis. Radish, black garden radish, summer- or winter-radish. From Raphanus sativus L. Sex. Syst. Tetradynamia Siliquosa (Cl. XV. O. 2). Nat. ord. Cruciferæ. Hayne XI. 41.

Of the several varieties of radish, generated by culture, the preference is given to that known under the name above-stated. The very large, roundish, turnip-shaped root, attaining a weight of more than one pound, has a black or black-gray skin, white, compact, very juicy flesh and an especially pungent taste and smell.

Hollow or juiceless roots are to be rejected, those of middling size being preferable. In the month of June or July, an essence is to be prepared from it after Rule 2, having a pale yellow colour and acrid smell. Compare the article *Armoracia*.

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RATANHIA.

Radices Ratanhiæ s. Ratanhæ. Ratany. From Krameria triandra Ruitz. Sex. Syst. Tetrandria Monogynia (Cl. IV. O. 1), Sex. Syst. Polygalaceæ. Göbel II. 4. Hayne VIII. 14. Düsseld. 413.

This root; coming from America, consists of a branched root-stock of indefinite shape, 4 to 8″ long and some inches thick, from which many branches are developped about 2′ long, 7 to 8‴ thick and numerous root-fibres, as long and to some lines thick; they are bent hither and thither, and sometimes knee-shaped. The thickness of the rind-substance, being externally dark brown-red, internally darker, nearly violet-red, is considerable, taken in proportion to the ligneous fibre; numerous longitudinal and cross-splits run through both, which causes the falling off of the first. The texture of the inner ligneous part is tight, coarsely-fibrous, when cut shining like resin. The root is tolerably heavy, inodorous, of a strongly astringent taste, colouring the saliva brown.

We select the middling pieces still completely clothed with the rind, and prepare from them a tincture after Rule 1 with *diluted* spirit of wine, being of a dark-brown-red colour and astringent taste.

RHEUM.

Radices Rhei Moscovitici s. Russici s. Rhabarbari veri s. orientalis. True Russian Rhubarb. From Rheum palmatum L. Sex. Syst. Enneandria Monogynia (Cl. IX. O. 1). Nat. ord. Polygonaceæ. Göbel II. 1. Hayne XII. 6. Düsseld. 118—120.

Though this sort of Rhubarb has the same native place with the socalled Indian or Chinese Rhubarb, it notwithstanding originates from other plants, and is justly preferred to them on account of its far more careful treatment and selection. It occurs in flat, partly barklike, or in roundish, cylindric, angular pieces with wide bore-holes of a very different size and middling heaviness. The outer yellow-powderous cover is arisen by mutual friction while it is transported; after its removal the yellow-brownish flat appears as if covered with white netlike veins; on the cross-cut it is vivid brownish, red and white marbled, crystalline and resinous, at the same time shining, when chewed grating between the teeth like sand, colouring the saliva strongly yellow, of nauseously rough, bitterish taste.

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For preparing a tincture after Rule 1 with *diluted* spirit of wine we select the heaviest and most regular coloured pieces; it is of a saturated dark-yellow colour and has the well-known taste of Rhubarb.

RHODODENDRON.

Folia Rhododendri chrysanthi. Sibirian or yellow.flowered Rhododendron, dwarf rose-bay. From Rhododendron chrysanthum L. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Ericaceæ. Hayne X. 27. Düsseld. 216.

This alpine plant indigenous to the highest snowy parts of Sibiria and Kamtshatka we buy as a drug. At the end of the span-long, quill-thick, gray-brown branches stand the leaves, which are 2 to 3″ long, short-petiolate, ovate, above smooth, yellowish-green or else rust-brown, at the margin a little revolute, and leatherlike, along with the red-brown, woolly flowerbuds. They smell slightly like rhubarb and have an astringent taste. They may be mistaken for the leaves of *Rhododendron ferrugineum*, but these are easily distinguished by the dark, rust-coloured cover of the underside. The leaves of *Rhododendron maximum* are nearly as big again, above more green, below more pale, and those of *Rhododendron hirsutum* are set with stiff hair at the margin, have longer petioles and white dots below.

After Rule 1 a tincture is to be prepared from them, being of a darkbrown colour and astringent taste.

RHUS TOXICODENDRON.

Folia Toxicodendri s. Rhois toxicodendri s. radicantis. Creeping poison oak, poison wood, poison ash, poison ivy. From Rhus Toxicodendron and radicans L. Sex. Syst. Pentandria Trigynia (Cl. V. O. 3). Nat. ord. Terebinthaceæ. Hayne IX. 1. Brandt et Ratzeb. Suppl. 48. Düsseld. 353 et 354.

This tree, stately in its country, North America, attains in Europe, where it is reared as an ornamental bush in gardens and parks, and flourishes in shaded, protected places, mostly only a height of 4 to 6′; it occurs partly erect, partly radicant.

The older rind is brown-gray, smooth, the leaves are long-petiolate, trifoliate, the leaflets broad, ovate, oblique-pointed, rounded at the base, commonly entire, only with single, large teeth,

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the two opposite short-petiolate, the upper long-petiolate. They, like the green branches, yield a milky juice, becoming quickly black in the air. The small, yellowish-green flowers stand in short panicles in the axils of the branches and appear from June to August.

The best time for collecting the leaves, is after sunset in cloudy, sultry days and from shaded places, in May and June before the flower appears; let a tincture be prepared from them after Rule 3, being of a dark-yellow colour. *

RHUS VERNIX.

Varnish Sumach tree. From Rhus Vernix. L. Sex. Syst. Pentandria Trigynia (Cl. V. O. 3). Nat. ord. Terebinthaceæ.

This tree, indigenous to North America and Japan, is cultivated like the before-mentioned in shaded gardens and parks of Germany, but less frequently, being shunned on account of its likewise noxious exhalations. Its branches are gray brown, covered with small warts, its leaves smooth, lanceolate, unequally-paired-pinnate, similar to walnut-leaves, ever-green; the pale yellow-greenish flowers stand in loose racemes and leave berrylike fruits, as big as peas.

The time for collection and manner of preparing are the same as with the before-mentioned plant.

ROSMARINUS.

Herba Anthos s. Rorismarini hortensis s. Libanotis. Rosemary, Anthos. From Rosmarinus officinalis — L. Sex. Syst. Diandria Monogynia (Cl II. O. 1). Nat. ord. Labiatæ. Hayne VII: 25. Düsseld. 162.

The bush, growing wild in South-Europe and the East, is also frequently found in our gardens, though it does not hold out our winters. The ligneous, erect stem attains a height of 3 to 6′ and

* Though the author collects this plant every year and from different places, he never has experienced any injury from its poisonous exhalations or from its touch, mentioned so often in the handbooks. May however nobody be made sure by this remark, for it is well known that susceptibility towards such impressions is very different. At least nobody should go to work, having the hands injured (by wounds from cutting, bruising or the like) and not without protecting gloves.

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is clothed with evergreen, below a little white-felty, opposite, linear-lanceolate, at the margin a little revolute leaves. The violet-reddish flowers sit racemose in the axils; they have a bilabiate calyx The whole plant has a strongly balsamic odour and bitterish camphorlike taste.

At the flowering-time, in May and June, we apply the leaves and flowers freed from the ligneous stems for tincture after Rule 3, being of a brown-green colour and having the odour and taste before-mentioned in a high degree.

RUTA.

Herba Rutæ hortensis s. sativæ s. latifoliæ s. vulgaris. Garden rue, broad-leaved rue, common rue. From Ruta graveolens L. Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Rutaceæ. Hayne VI. 8. Düsseld. 376.

A plant frequently cultivated in our gardens, has stems 1 to 3′ feet high, round, stiff, smooth and branched, long-petiolate bi- and tripartite pinnate cleft, somewhat fleshy leaves, the leaflets of which are obtusely spatulæform or cuneiform, entire and very vivid green. The gold-yellow flowers appear in June or July at the end of the branches in branched corymbs. The whole plant has, especially when bruised, a balsamic, somewhat nauseous, strong smell and aromatic acrid, bitterish taste.

The flowerbuds not yet open are used for essence prepared after Rule 2, having a dark-brown colour and the strong odour and taste of the fresh plant.

SABADILLA.

Semen Sabadillæ s. Sabatigliæ s. Cebadillæ, Hordeum causticum. Cevadilla, Indian caustic barley. From Veratrum officinale v. Schlechtenthal. Sex. Syst. Polygamia Monœcia Cl. XXIII. O. 1). Nat. ord. Veratreæ (Melanthaceæ). Düsseld. Suppl. 4.

The mother-plant yielding this seed grows according to Brandt upon the Mexican Cordilleras; what we get in commerce under the name of Cevadilla seed is a mixture of seed-capsules, partly without, partly with seed in them, and of loose seed and pedicels. The brownish capsule, composed of three monolocular, connate splitting capsules, is smooth, trilobed, at the top towards the interior opening. It contains in each carpel several oblong some-

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what angular, wrinkled, black-brown, shining seeds, having no sensible smell, but a very acrid, long-lasting taste.

The seeds taken out of the capsulæ are used for tincture to be prepared after Rule 1, being of a yellow-brown colour, but without smell.

SABINA.

Herba Sabinæ s. Savinæ. Savine, Common Sabine. From Juniperus Sabina L. Sex. Syst. Diœcia Monadelphia (Cl. XXII. O. 8.) Nat. ord. Coniferæ. Brandt et Ratzeb. I. 47. Düsseld. 87.

Indigenous to the countries of South-Europe, this treelike evergreen bush is also not seldom reared in Germany, where it likes a shaded place. Its very small, opposite, lanceolate, imbricated leaves, are dark-green, of extremely strong, nauseous-balsamic odour, and bitter acrid taste.

April is the best time for collecting the tops of the younger branches for preparing from them a tincture after Rule 3. The tincture has a saturated darkgreen-brown colour and very strongly the peculiar smell and taste.

SAMBUCUS.

Flores Sambuci et Cortex interior. Elder, bore-tree, common elder. From Sambucus nigra L. Sex. Syst. Pentandria trigynia (Cl. V. O. 3). Nat. ord. Sambucineæ. Hayne IV. 16. Düsseld. 266.

The arborescent shrub spread all over Europe is sufficiently known and needs no description.

In June and July, when fully blooming, we collect the whole umbels along with the two leaves standing next to them for preparing an essence after Rule 2, which has a yellow-brown colour and the known smell of the dried flowers.

Besides this there is prepared after Rule 3 a tincture from the greenish-white bark of the younger branches (*Cortex interior*) freed from the epidermis; which tincture is of brown-green colour and strong, nauseous smell and taste, deviating very much from the essence prepared from flowers, in its efficacy as well as in its external properties.

* It is to be observed, that the physician, when prescribing the tincture of the *bark*, always designates is by "*Cortex Sambuci*", on the contrary the single term, "*Sambucus*" always means the tincture prepared from the *flowers*.

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SANGUINARIA.

Radix Sanguinariæ. Blood-root, Sanguinaria. From Sanguinaria canadensis L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Papaveraceæ. Göbel II. 21. Düsseld. 407.

The dried root of the blood-root, coming as a drug from the North American forests, we prefer to that which is cultivated in the gardens of Germany. It consists of pieces, 1 to 3″ long, to $^1/_2$″ thick, mostly single, nearly cylindrical, bent hither and thither, only now and then set with single tough fibres. The surface is of a dirty rust-brown colour. On the cross-cut one perceives on the outer margin below the skinny epidermis a rind-substance, a little thicker, reddish or darker, resinous-shining and firm. All remaining is the now purely, now dirty white spongy medullary substance, sprinkled with scattered cinnabar-red dots. The fracture is unequal, nearly corklike. The taste is sharp, slightly rough; it has no smell. When chewed, the saliva is dyed reddish.

A tincture is to be prepared from it after Rule 1, having a hyacinth-red colour.

SASSAFRAS.

Cortex Sassafras. Sassafras bark. From Laurus Sassafras L. Sassafras officinalis. Sex. Syst. Enneandria Monogynia (Cl. IX. O. 1). Nat. ord. Lauraceæ. Göbel I. 29. Düsseld. 131.

The bark brought us as a drug under this name from North America, comes from the root of the Sassafras tree. The pieces are irregular, mostly rather flat, 1 to 2‴ thick, $^1/_2$ to some inches long and large, loose, brittle, rugged, and cracked, either, if still clothed with the epidermis, dirty-gray with darker spots, or light rust-brown, of agreeable, fennellike odour, and at first sweetish, afterwards sharp, remotely camphorlike taste. There is a tincture extracted from them after Rule 1, being of red-brown colour and powerful smell and taste.

SASSAPARILLA.

Radix Sassaparillæ s. Sarsaparillæ s. Salsaparillæ s. Sarsæ. Sarsaparilla. From Smilax Syphilitica Hanc., Smilax medica Schlechtend., Smilax officinalis Kunth, and different other species

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of Smilax. Sex. Syst. Diœcia Hexandria (Cl. XXII. O. 4). Nat. ord. Asparagineæ. Göbel II. 18 et 19. Düsseld. Suppl. 7.

The difference of the origin as well as of the sources whence this manyfold used drug is drawn, has been the cause of the uncertainties and contradictions in the statements of the different authors. Göbel designates in his pharmaceutical work three sorts as the more preferable, and Geiger in his handbook agrees in the main with him, after having proved that the efficaciousness of the root does exist not in the amylum, but rather in the peculiar substance, called Smilacine, contained in the ligneous body and in the epidermis, but not in the substance of the rind.

According to this the following sorts are designated to be the best: —

1. *Sarsaparilla* from Honduras, conf. Göbel's mentioned work vol. II. T. 18. F. 3 a—d.
2. *Sarsaparilla* from Vera Cruz or Caracas T. 19. F. 2. a—d.
3. *Sarsaparilla* from Lisboa or the Brazils, or Para, Brazizilian or Portuguese sarsaparilla. T. 19. F. 3. a—d.

In general in selecting the roots there is to be observed, that they are internally mealy, yellowish-white, not brittle or even worm-eaten, but firm, and easily cleaved longitudinally. They have no smell or at most in whole bundles, a faint, earthy smell, and a mucous, slightly bitterish, somewhat rough taste. Roots with too thick rindsubstance, which in parts is separated, and which have projecting wrinkles, or a lighter, yellowish-leather-coloured epidermis are to be rejected (conf. Göbel T. 19. a— c.), though they may also well belong to some species of Smilax. Other mistakes, or more rightly adulterations, f. i. with *Rad. Asparagi, Caricis arenariæ*, or with the root of *Aralia nudicaulis*, or of *Humulus Lupulus* and the like, will be detected by anybody experienced in some degree, in as much as nobody will buy the roots already comminuted.

We prepare a tincture from them after Rule 1, which is of pale-yellow colour, and has neither smell nor taste.

SCILLA.

Radices Scillæ s. Squillæ rubræ s. Pancratii veri s. Ornithogali, Cepa marina. Squill, sea-onion. From Squilla maritima L. Sex. Syst. Hexandria Monogynia (Cl. VI. O. 1). Nat. ord. Liliaceæ. Göbel II. 17. Hayne XI. 21. Düsseld. 55.

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The true squill is a perennial growing on the sandy shores of the Mediterranean, from which only the bulbs covered with red skins are gathered. They are to be had in commerce fresh as well as dried, but they are bought commonly in the latter state.

The whole bulb attains a weight of several pounds, is covered outside with skinny, red-brown, pellucent peels, under which then lie the thick, fleshy, juicy, at first pale-violet, nearer to the middle quite white scales. At the rather broad base sits in a circle, a number of thick round, long root-fibres and at the pointed top the green shoot shows itself. The dried bulbs occur either in entire or once cut, detached scales, more frequently in narrow crosscuts of them, being several inches long, half an inch broad, and some lines thick. They look yellowish-white, are commonly flexible and tough, for they eagerly imbibe water from the air. They have no smell, but a very nauseous loathsome bitter taste.

No volatile constituent existing in the squill, which could be lost in drying, and well-dried bulbs at all events being less subject to be spoiled, than the imported fresh ones, it is more to the purpose for our use to apply the first, especially as these are to be had always and everywhere. Let only the whitest and most fleshy be selected, which have not become brown by drying or ever half-burned, as little the thin, coloured, skinny, inefficacious scales, comminuted with the aid of a knife, and *diluted* spirit of wine poured over them after Rule 1. The tincture thus obtained is of a lighter (quite pale straw-yellow) colour, than that prepared from fresh roots, but is notwithstanding noways less efficacious.

SCROPHULARIA.

Radix Scrophulariæ vulgaris s. fœtidæ s. majoris (the ***Galiopsis, Ocimastrum*** of olden times). Fig-wort, brown-wort, blind-nettle, kernel-wort, gil-wort, scrophulary. From Scrophularia nodosa L. Sex. Syst. Didynamia Angiospermia (Cl. XIV. O. 2). Nat. ord. Scrophulariæ. Göbel II. 33. Hayne V. 35.

This plant spread over all Europe is found in moist and shady places, on the sides of rivers and brooks, near dikes, hedges, and in the bushes. The stem, two to three feet high, is quite erect, branched, sharp four-edged, smooth, only above set a little with soft hair. Branches and leaves are opposite, the latter petiolate, ovate-cordate, sharp, partly doubly dentated, on the lower surface paler, netlike veined. The flowers stand at the end of the

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stem and the branches in forked, paniculæform racemes, the green-yellowish corol is at the back and inside brownred, inflate, obtuse labiate.

The perennial root forms a knotty-ramose, coarsely-wrinkled stock of very indefinite shape, with branches running out horizontally, obtuse-angled, 2 to 3″ long, to ½″ thick, the outside of which is brown or blackgray, the inside of darker colour, and has a faint, a little nauseous smell.

The *Scrophularia aquatica* (water-betony), very similar to this, is distinguished with certainty by its alated stem and petioles, as well as its root, by having the stock set densely with fine and confused fibres.

In May, before the flower appears, the root is to be collected and to be prepared for tincture after Rule 3, having a light-brown colour.

SECALE CORNUTUM.

Secale clavatum s. corniculatum s. luxurians, Clavus secalinus s. secalis, Secalis mater, Grana secalis degenerati s. Clavi siliginis, Secale temulentum s. maternum, Ergota. Spurred rye, thorned rye, cockspur rye, ergot of rye. Brandt et Ratzeb. II. 9. Düsseld. Suppl. 1.

This degeneration of the ovary of the rye (as well as of several gramineous products) is ascribed to different causes. The greatest probability is for the supposition, that it is a fungus (*Sclerotium clavus Decandoll.*) preventing the formation of the seed-grains even from the beginning, by growing in its place. The circumstances accompanying its appearance speak for it; for the ergot takes rise mostly in fertile years, when hot sunshine and rain alternate quickly. It occurs between the awns in the shape of cylindric, somewhat crooked and angular, longitudinally wrinkled bodies, often very similiar to a goat's-horn, ½ to 1″ long, outside of brown-violet, inside yellow-white, sometimes violet-white colour, viscid condition, disgusting fungous-like rancid smell, and faint, sweetish taste. This fungus being only a little part in proportion to the whole grain, and often wholly wanting (by being peeled off from dried grains), the efficaciousness of the ergot cannot be ascribed to it, but must belong to the degenerated ovary.

We prepare from the grains gathered before the ripening of the rye, without drying them, a tincture after Rule 3 being of darkhyacinth-red colour. *

* For applying the ergot for triturations, it is necessary to dry it previously with moderate warmth perfectly, and then to preserve it in well stoppered glasses.

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SEDUM ACRE.

Herba Sedi minoris acris s. Sedi minimi s. Sempervivi minoris s. Vermicularis. Wall-pepper, stone-crop, prick-madam, sengreen. From Sedum acre L. Sex. Syst. Decandria Pentagynia (Cl. X. O. 5). Nat. ord. Crassulaceæ. Hayne I. 15.

The perennial little plant is spread all over Germany; it grows most frequently on old, dry and sunny situated walls, on desert sandy places, on meager grass-plots, and on rocks, commonly clustering together like turf; there it sprouts its round stems, often lying down on the base, one to at most four inches long. These are set imbricately from below with apetiolate, short, roundish, obtuse, fleshy, whitish-green little leaves. The yellow, star-shaped flowers form at the top pauciflorous corymbs. The whole plant has an acrid-burning, long lasting, nauseous taste.

The *Sedum sexangulare*, related to it, is distinguished by its longer, cylindric, tasteless leaves, standing in six rows. *Sedum reflexum*, as a rule, becomes higher; its leaves are longer, cylindrically awl-shaped, and at the stem bent downwards; it is likewise tasteless.

The time for collection is in May before the development of the flower; at which time the whole plant is used for preparing an essence after Rule 2, which is of a pale brownish-yellow colour and has the acrid taste of it.

SELENIUM.

Selenium.

This sulphurlike elementary substance, which is separated in pure state in chemical factories partly from sulphur residue, collecting itself in the lead-chambers in which sulphuric acid is prepared, partly from its combinations with lead, copper, silver or quicksilver, has the following propertics: — It possesses a reflecting surface of dark, redbrown colour, similar to polished hematite, is odourless and tasteless, fuses easily and passes off in vapour. Its fracture is of metallic splendour, conchoidal-glasslike, of lead-gray colour, besides brittle and easily friable into a dirty-tile-red powder, which sticking to the pestle appears gray and assumes a polish. From this reason, in preparing the first trituration of Sele-

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nium, a proper quantity of coarsely powdered sugar of milk is to be taken into the mortar with the Selenium at the same time, and assiduous scraping off is necessary, for obviating the sticking of the mixture. This trituration has a red-gray colour.

SENEGA.

Radices Senegæ s. Senecæ s. Polygalæ Virginianæ. Senega, rattle-snake root. From Polygala Senega L. Sex. Syst. Diadelphia Octandria (Cl. XVII. O. 3). Nat. ord. Polygaleæ. Göbel II. 20. Hayne XIII. 21. Düsseld. 412.

The dry root brought us from the United States of North-America is as thick as a quill or thicker, but mostly thinner, ramose, bent hither and thither, contorted and entwined, to 2 to 6″ long, with a knarled, branched head, to ½″ thick. Outside gray-brownish-yellowish, wrinkled lengthways, often rugged, rough, uneven, on the cross-cut a little resinous shining, inside white-yellowish, ligneous, brittle, of disgustingly rancid smell, most nauseous, salivating taste, rough in the throat; its dust causes repeated vehement sneezing.

We prepare from it a tincture after Rule 1, being of pale-yellow colour and the mentioned taste.

SENNA.

Folia Sennæ Alexandrinæ. Senna. From Cassia Senna L. (also from Cassia lanceolata. C. obovata, C. acutifolia, C. elongata). Sex. Syst. Decandria Monogynia (Cl. X. O. 1). Nat. ord. Cassieæ. Hayne IX. 40—43. Düsseld. 348.

The senna, as it is furnished via Triest from Africa, comes from several often very different species of the large family cassia, especially from C. lanceolata, C. obovata, and Cassia obtusata. The senna known under the name of Senna Alexandrina remains the best, though it does not exclusively belong to one and the same plant, but forms a mixture of different origin. In selecting it, it is to be observed that the leaflets may be a) entire as much as possible; b) not old or yellow from moisture; c) free from thick petioles, and d) free from admixture of the leaves of *Cynanchum Arguel*, which is mostly the case, and which are distinguished by their thick, dimly gray-green, warty wrinkled appearance, a longer,

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linear-lanceolate, frequently at the margin involute shape, and their nauseously bitter taste.

The best entire senna consists of leaflets, which are ovate, pointed, in the middle with a strongly marked rib, ½ to 1″ long, to 3‴ broad, smooth, thin, brittle, of pale yellow-green colour, peculiar, disagreeable smell, and very mucous, bitterish-nauseous taste.

We prepare from the pure leaflets after having them freed from all strange admixtures, a tincture after Rule 1 with *diluted* spirit of wine, having a very dark brown-green colour.

SEPIA.

Sepiæ succus. Sepia. Inky juice of the cuttlefish. From Sepia officinalis L. Cl. Mollusca. O. Cephalopoda Cuv. Brandt et Ratzeb. II. 31 et 32.

This animal inhabits all European seas, but most frequently the Mediterranean. From thence also comes the officinal part under the name of painter's sepia. It is the contents of a separate bladder, to be found in the abdominal cavity of the animal, opening itself like a funnel in the mouth, and which may be spirted out at will. In dry state, as it occurs in trade, it appears to be a darkblackish-brown, solid mass, of shining conchoidal, very brittle fracture, having a faint smell of seafish, nearly no taste at all, scarcely dying the saliva, included in little skins of the shape of grapes. For triturations it must be carefully dried previously, and freed from the skinny envelop.

There may be made a tincture from it after Rule 1 with diluted spirit of wine, which is nearly colourless, but of a strong smell and little taste; though trituration is the chief form.

SERPENTARIA.

Radices Serpentariæ virginianæ, Radices Viperinæ s. Colubrinæ s. Contrayervæ virginianæ. Serpentary, Virginian snakeroot. From Aristolochia Serpentaria L. Sex. Syst. Gynandria Hexandria (Cl. XX. O. 4). Nat. ord. Aristolochiaceæ. Göbel II. 25. Düsseld. 143.

This plant, indigenous to North-America, furnishes us with its roots by drug-commerce. They consist of a short, thin, cylin-

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drical root-stock, which is bent hither and thither, set with fibres closely sitting on, 1 to 4″ long, thin, flexible, often tightly matted together, of dark gray-brown, inside lighter colour. Its smell is strong, more like camphor than like valerian; taste aromatic, pungent bitterish.

The tincture, prepared after Rule 1, has a pale yellow-brown colour and strong smell.

SILICEA.

Terra Silicea, Acidum Silicum, Silica. Silicic acid, Silicious earth.

In an iron crucible, quite free from oxide (a platinum crucible being still better), a mixture of equal parts of carbonate of soda fallen into powder and dry carbonate of potash are melted. In the fusing mass by degrees and in little portions a fourth part of subtilly powdered rock-crystal is put; each time an effervescence arises, caused by the escaping carbonic acid, wherefore the crucible must not be too small. If this ceases when new parts are put in, the mass is set aside for becoming cool after having been poured out of the crucible upon a stone plate or porcelain dish; then it is dissolved in diluted pure muriatic acid, filtered, and evaporated to dryness. For removing the possibly existing traces of oxide of iron, the completely dried and powdered mass is moistened with concentrated muriatic acid, and washed after some hours repeatedly with hot distilled water, upon which the pure silicic acid remains as a snow-white, slowly depositing precipitate, which is collected upon a filter, dried and pounded into a subtle powder; it is preserved in the form of a very loose, specifically very light, dazzling white powder.

It is used for triturations.

SOLANUM LYCOPERSICUM.

Mala aurea s. lycopersica, poma amoris. Tomato, love apple, wolf's peach, apple of love. From Solanum Lycopersicum L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solaneæ.

The plant, indigenous to South-America, is cultivated in our gardens. The stem, about 4′ high, is branched, and as well as the

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unequally paired leaves set with hair. The flowers are yellow, axillary, of the form of the solaneæ. The large, apple-shaped, a little flat-pressed fruit, is smooth, shining red, very juicy and fleshy, of agreeable sour taste.

We make use of the latter, when they are fully ripe, in October, for preparing an essence after Rule 2, having pale yellow colour and little taste.

SOLANUM MAMMOSUM.

Mammiform solanum. From Solanum mammosum L. Sex. Syst. Pentandria Monogynia (Cl. V. O 1). Nat. ord. Solaneæ.

This annual plant is indigenous to the West Indies, Carolina and Virginia, and is but now and then reared in the botanical gardens of Europe. The erect, single, villous stem, grows several feet high, and is set with strong, crooked pricks. Its leaves, being 3 to 4″ long, are frequently as broad, cordate-lobed, set with red hair. The small blue-gray flowers stand in cymes, and bring yellow invertedly pear-shaped (or mammiform) fruits, to be prepared for essence after Rule 2.

SOLANUM NIGRUM.

Herba Solani s. Solatri nigri. Common night-shade. From Solanum nigrum L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solaneæ. Brandt et Ratzeb. I. 19. Hayne II. 40. Düsseld. 189.

This known annual weed, spread everywhere, grows in gardens, near roads, hedges and on heaps of rubbish. It is to 2′ high, has erect diffuse stems, with alternate, petiolate leaves, 1½ to 3″ inches long, and half as broad, obtuse-angled, and smooth. The white, sometimes pale-violet flowers are found from July to September in axillary umbels, on dependent long peduncles, and leave black, sometimes orange, shining berries, as large as peas.

We apply, the root excepted, the whole plant, when it has already ripe berries (for in the later summermonths, flowerbuds, flowers, unripe and ripe berries are found at the same time) and prepare from it an essence after Rule 2, having darkbrown colour and narcotic smell and taste.

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SPIGELIA.

Herba Spigeliæ anthelmiæ. Indian pink, pink-root. From Spigelia anthelmia L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Gentianeæ (Spigeliaceæ). Düsseld. 205.

This plant is indigenous to Brazils, Cayenne, Martinique, and the Antilles. We get it as dried, gray-green stems, 1 to 2′ long, as thick as a straw, above thicker, having few leaves, sometimes with the fibrous, blackish-gray root on them, which latter has a disgusting smell. The lanceolate, apetiolate leaves stand at the top of the stems, four in form of a cross, the flowers, seldom on them, stand in short spikes.

We prepare a tincture from it after Rule 1, having a pale-green colour.

SPONGIA.

Spongia usta s. tosta, Carbo Spongiæ. Burnt sponge.

Let any quantity of raw sponge (best Turkey sponge), after having been freed from the stones, paper, straw and like adulterations by sorting, be cut in pieces of the size of a hazel-nut, then be burnt in a common iron coffee-roaster, but which is taken for this purpose *exclusively*, moderately pressed in, and over more vivid wood fire, and slowly turning, till the sponge gets a dark rust-brown colour, *but not longer*. After having shaken it out, the pieces among it, which have become quite coal-black are rejected, as being less efficacious and then the rest is pulverized and sifted. This must be continued only as long as powder is obtained, without requiring heavy pounding, for the hard residue, consisting mostly of stones and shells is no preparation fit for use and therefore to be rejected.

From this fresh prepared powder a tincture is to be made after Rule 1, which must possess a yellowish coffee-brown, a little changing colour and very distinct smell and taste of iodine. The more these properties are wanting, the less inefficacious this important medicine is believed to be, and as this form is to be judged with grater certainty, it deserves the preference from the former usual triturations. It is to be preserved well protected from sunlight.

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STANNUM.

Tin, among the ancients understood under the sign and name of Jupiter.

This is a soft, very tough metal, of strong, silverlike brightness; when bent in not to thick bars, it gives a peculiar, scratching sound, which is the stronger, the purer the metal. The best is brought in commerce under the name of Saxon and English grain tin. For being convinced of its purity, it is fused at the most possible low temperature and poured out upon a stone plate or other fit mould. It must then possess a quite smooth and bright surface, and show not the least trace of crystallization.

For medical preparations we first reduce it by melting and pouring it out into a deep vessel with pure water into thin lamins, in which shape it is fitter for dissolution.

A weighed quantity of such laminated tin is poured over, in a proper vessel, with concentrated, pure muriatic acid, and set aside under moderate warmth for dissolution. Without fear of adulteration a polished coppervessel may be advantageously selected for this, as long only care is taken, to have always tin in excess. By adding gradually muriatic acid the perfect solution is effected. This filtered solution, being as neutral as possible, is diluted with so much distilled water, that the whole liquid is a hundred times as much as it contains dissolved tin. After having slightly acidulated the solution with pure muriatic acid if necessary, the galvanic reduction of the metal is effected by zinc put in it, and the whole process is followed up as it is given under the head "*Plumbum*".

In this way a subtle and quite pure metallic powder is obtained, being of light yellowish-gray colour without brightness, which it soon assumes under the burnishing-steel, and is used like the other for triturations.

STAPHISAGRIA.

Semen Staphisagriæ s. Staphidis agriæ s. pedicularis. Staves-acre, louse-wort, lice-bane. From Delphinium Staphisagria L. Sex. Syst. Polyandria Trigynia (Cl. XIII. O. 3). Nat. ord. Ranunculaceæ. Düsseld. 394.

The lark-spur, growing wild in Southern Europe on barren

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places, furnishes these seeds, which are irregular three or four-edged, externally gray-brown, rough, with netlike raised lines, and contain a yellowish or brownish, very oily kernel, of bitter, afterwards burning taste.

It is needful to free the powdered seeds as much as possible from the fixed oil by pressing them repeatedly between renewed bibulous paper, before they are prepared for tincture after Rule 1. The black, far more inefficacious seeds are also to be sorted out, and only the grayish or brown, heavy ones are to applied. The colour of the tincture is pale straw-yellow.

STRAMONIUM.

Semen Daturæ s. Stramonii s. Solani fœtidi s. Solani maniaci. Thornapple, apple-thorn. From Datura Stramonium L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solanaceæ. Brandt et Ratzeb. I. 15. Hayne IV. 7. Düsseld. 193.

This annual plant is diffused throughout the whole world, and is found partly growing wild on heaps of rubbish, near garden-dung, on pasture-grounds, in and near villages, partly as ornamental plant in gardens. The strong-fibred, diffuse, white, turnip-like root, sprouts forth a smooth, round stem, below single, above branched, 2 to 4′ high. The long-petiolate leaves stand alternate, are large, ovate-pointed, unequally sinuous, dentate, nearly naked, above darker green than below, of benumbing nauseous, loathsome smell and bitter-saltish taste. The large, milkwhite funnel-shaped flowers, appear in July and August, are axillary and leave a very prickly, quadrilocular capsule, as large as a walnut and larger, containing a large number of reniform, flat-pressed seeds, as big as lentils, when ripe outside brownish-black, rugose, inside white, inodorous, oily. These contain the efficacious constituent (Daturine) in greater quantity, than the leaves; they alone must be applied for tincture after Rule 1.

Its colour is yellowish-brown, changing vividly into green, the want of which property, as well as a deposit of a brown resinous layer in the store-vessel, would indicate an older not more efficacious tincture.

STRONTIA.

Terra strontiana, Strontia carbonica, Carbonas strontius. Carbonate of Strontian, Strontian earth.

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Crystallized muriate of strontia of commerce is purified, if necessary, by crystallizing; the crystals obtained, sixsided needles, are re-dissolved in ten times as much of pure water and then decomposed by carbonate of Soda.

The precipitate sufficiently washed and dried, is a loose, subtle powder, similar to magnesia, of which triturations are to be made.

STRYCHNINUM.

Strychnium. Strychnia.

An Alkaloid, which occurs in the poison nut (*Nux vomica*), the Ignatius' bean, the false Angustura bark and probably also in other parts of plants of the Strychneæ family (commonly along with Brucia). It is prepared in the following manner.

Any quantity of bruised poison nuts is digested repeatedly with 4 to 5 times as much alcohol of 60—70 per cent, hightening the temperature to the boiling point; the extractions mixed are acidulated with little muriatic acid, the alcohol removed by distillation, the aqueous residue poured off from the resinous parts, and then a saturated aqueous solution of bicarbonate of potash is added a little to excess. To the filtered mixture as much liquid caustic ammoniac is added, as previously solution of potash was taken. Let the whole stand quiet for 48 hours or longer, collect the deposit got upon a filter, dry it, and extract it then with four times as much absolute alcohol, frequently shaking the vessel, during some hours. This operation is repeated, after having poured off the first quantity of alcohol. The not dissolved residue is collected in a filter, again dried, and boiled repeatedly with water, till the cooled decoct is not more coloured brownish-red, when some drops of the most concentrated sulphuric acid are put in, by which colouring still present Brucia is perceived. The Strychnia now remaining undissolved is again dissolved in diluted spirit of wine for being purified perfectly, filtered, and brought to crystallization by slow evaporation; it will shoot on in small, white, foursided columns, which are obtusely pointed.

STRYCHNINUM NITRICUM.

Nitrate of Strychnia is prepared by dissolving the pure, crystallized Strychnia in very diluted nitric acid, filtering and evaporating the solution at the most gentle warmth. It shoots on in

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white needles, which shine like silk, are flexible, united fasciculated, and dissolvable in water and diluted alcohol.

STRYCHNINUM SULPHURICUM.

Sulphate of Strychnia is prepared with pure sulphuric acid quite in the same manner as the precedent salt of Strychnia and has the same properties.

All preparations of Strychnia are like other alkaloids to be triturated after the rules given, this form being more durable than the solution in spirit of wine.

SULPHUR.

Flores sulphuris, Sulphur s. Sulfur depuratum s. sublimatum. Flowers of sulphur, sublimed sulphur, pulverulent sulphur.

The flowers of sulphur of commerce must not alone be washed repeatedly with boiling distilled water, on account of the sulphuric acid contained in them, but it is also necessary to test whether they contain arsenic, before their use for medicinal purposes.

This is done most easily and securely by detonating the sulphur mixed with four times as much pure nitre in a glowing crucible, then dissolving the remaining mass in water, and applying the known reagentia showing arsenic to the solution. Should the sulphur contain Selenium, which would be indicated by a darker orange colour, one would be convinced of it, by boiling the sulphur with nitro-muriatic acid, neutralizing the filtration with potash and adding hyposulphate of ammonia, whereby Selenium is separated in red flakes.

The pure sulphur has a pale lemon-yellow, not dark colour, keeps dry, forms not little lumps when pressed between the fingers, but stains more and scratches less than the impure.

The most proper preparation at all events is the trituration; but Halnemann has also introduced

TINCTURA SULPHURIS

or ***Spiritus sulphuratus,*** which is to be prepared with *strengthened* alcohol, one ounce of which dissolves at common temperature 1 to 2 grains. At very low temperature or by slow evaporation the sulphur secedes in crystals, in the shape of fine yellowish-white needles. Well-prepared tincture of sulphur must cause an opalescent turbidness, when dropped into water.

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SULPHUR AURATUM.

Sulphur Antimonii auratum, Antimonium sulphuratum aurantiacum, Sulphur stibiatum aurantiacum, Stibium sulphuratum aurantiacum, Sulphuretum Stibii aurantiacum, Stibium s. Antimonium bisulphuratum præcipitatum, Oxydum Stibii hydrosulphuratum. Golden sulphur of antimony, oxysulphuret of antimony.

For obtaining an always uniform and pure remedy, it is necessary, to apply the sulpho-antimoniate of sulpho-soda one's self, which is known under the name of Schlippe's salt, and is prepared in the following manner:

Let in a polished iron boiler be slackened two parts of well burned lime into a subtle powder, stirred by adding successively 20 parts of water into a fluid like thin milk and let this be boiled after having added 1 part of washed sulphur and a solution of 9 parts of carbonate of soda in 20 parts of hot water, until the formation of sulphuret of soda has taken place; then 3 parts of sulphuret of antimony, reduced to a most subtle powder are added and often stirring the boiling is continued, for 1 to 2 hours. After having removed the boiler from the fire and the well-covered contents are refrigerated, the lye standing over the sediments is removed as far as possible by a glass-siphon, and is set aside in a well closing glass-bottle for being cleared out perfectly. The residue in the boiler is boiled for half an hour with 8 parts of water, added to it, and the liquid treated like the first.

The mixed lyes, after being cleared by sufficient standing, are put back in the cleaned boiler, and evaporated to the point of crystallization. The crystals obtained are pale yellowish, pellucid, forming regular tetraedrons with obtused angles, are collected in a glass-funnel, washed with distilled water to which $^1/_{20}$ of caustic lye of soda is admixed, and must then drop off well.

Ten parts of the salt got in this manner, are dissolved in six parts of hot distilled water, filtered, and then mixed under continual stirring, with a thin stream of a mixture consisting of 3 parts of sulphuric acid free from arsenic, and 100 parts of water. This is to be done in open air, and care must be taken not to inhale the evolving hydrosulphuretted gas.

After the deposition of the fiery orange-coloured precipitate, the supernatant liquid is drawn off with the aid of a glass-siphon, and the first is so often washed repeatedly with hot distilled wa-

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ter, until the washwater flows off pure. Collected upon a filter and pressed after being dropped off, the precipitate is divided in little lumps and dried perfectly upon bibulous paper, with very gentle warmth or in the warm air, and then triturated into a fine powder, which is to be preserved protected from light.

Triturations are made from it.

SUMBUL.

Sumbul-root. Sumbulus moschatus (Reinsch) can only so long be regarded as an interimistic systematical name, until the origin of this drug is scientifically fixed and has become known.

The statement according to which this root comes from *Nardostachys Jatamansi*, is not in the least probable. Its origin is rather derived with far better reason from a waterplant, belonging to the umbelliferæ.

We obtain the root, coming from Bucharia, via Russia, in large thick slices, having 2—5″ in diameter by 1 to 2″ thickness, very similar to the root pieces formerly known under the name of *Mechoacana alba* (a plant likewise not determined with certainty) as well as to the roots of the *Bryonia*. We may conclude from this, that the root has the extent and shape of a large turnip and in its fresh state a weight of one to two pounds.

The slices show upon their flat sides a pretty loose, spongy texture of dirty earth-colour, frequently interwoven with irregular horizontal layers of bundles of vessels, at the same time as if interlarded with many gumlike, semipellucid, little lumps, singly interspersed (which may be caused from dried milkjuice). The outside of the root is of somewhat darker colour, furrowed with parallel cross-wrinkles, narrowing towards the head in concentric rings round a top, about one inch thick, and which is formed by a bundle of tightly united, bristly fibres, seemingly the remains of the stem. Such fibres are also found on the periphery of many rootslices, sometimes as tightly accumulated, and nearly in parallel direction, as the hair on a doe-skin. The odour is decidedly and very strong musklike, taste similar, sweetish bitterish, afterwards a little rough.

We prepare from it a tincture with *diluted* spirit of wine, being of a pale brown colour and not very strong smell.

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SYMPHYTUM.

Radices Symphyti s. Consolidæ majoris. Comfrey, consound. From Symphytum officinale L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Borragineæ. Hayne III. 37. Düsseld. 185. Göbel II. 29.

The perennial plant, spread over nearly all Europe, grows abundantly in moist dikes and on meadows, on the sides of rivers and ponds. The large, cylindric, branched root, 1 to 2″ long, to several inches thick, is fleshy, outside clothed with a black or dark brown upperskin, inside white, friable, inodorous, very mucous. The stem attains a height to 3′, is branched, angular and rough-haired; the long, lanceolate, entire root-leaves, run into a petiole; the stem-leaves are sessile, decurrent. The purple or white, tubular flowers, stand in racemes at the end, turned to one side, pendulous.

The best time for gathering the root is autumn, and the preparation of the tincture after Rule 3 is to be preferred to preparing an essence, the tough mucus preventing perfect pressing off of the juice. The colour of the tincture is brown, its smell faint earthy.

TABACUM.

Herba Nicotianæ s. Tabaci s. Hyoscyami Peruviani s. Consolidæ Indicæ. Tobacco. From Nicotiana Tabacum L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Solaneæ, Hayne XII. 41. Düsseld. 194.

Indigenous originally to America, the tobacco is cultivated everywhere. The plant, very similar to the black henbane in its first development, has after its further perfection a single, leaved stem, 4 to 6′ high. The sessile leaves are ovate-lanceolate, entire, with strong middle-ribs. The risp, standing at the end, is large, manyflowered, the flower infundibiliform, rose-red. The whole plant is set with glandulous hair, issuing a viscous, strong odoriferous moisture.

In the beginning of the flowering-time, in July or August, the largest leaves are used for preparing an essence from them after Rule 2, having brown-green colour and narcotic smell.

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TANACETUM.

Herba et flores Athanasiæ s. Tanaceti. Tansy. From Tanacetum vulgare L. Sex. Syst. Syngenesia Superflua (Cl. XIX. O. 2). Nat. ord. Compositæ. Hayne II. 6. Düsseld. 236.

The plant, spread nearly all over Europe, grows near roads, dry dikes, on the edges of fields and ditches, and becomes to 4′ high. The erect, almost smooth, angular, when flowering hard, stem is divided above in numerous branches. The alternate, petiolate leaves are feathered in unequal pairs, darkgreen, smooth, soft-felty haired when young. The gold-yellow flowers, aggregate in thick corymbs at the ends of the stem, appear in July. They by preference posses the nauseous-balsamic smell and taste peculiar to the whole plant, and which is not dissimilar to that of wormseed. These are prepared for tincture after Rule 3, which is of a greenish-yellow colour and strong smell and taste.

TARAXACUM.

Herba et Radices Taraxaci s. Dentis Leonis s. Leontodontis s. Lactucæ pratensis. Dandelion, lion's tooth. From Leontodon Taraxacum L. Sex. Syst. Syngenesia Æqualis (Cl. XIX. O. 1). Nat. ord. Compositæ. Hayne II. 4. Düsseld. 249.

This well known and everywhere spread plant needs no description, is also hardly subject to be confounded with others, in as much as it has a sure characteristic by its tubular stems, yielding a white milkjuice.

Let the whole plant along with the root be gathered in April and May, before the flower is opened, and let those plants be selected by preference, which are grown on poor, stony ground, and be applied for preparing an essence, after Rule 2, which is of a light, yellow-brown colour.

TARTARUS STIBIATUS.

Tartarus emeticus s. antimoniatus, Tartarus Antimonii, Antimonium tartarisatum s. tartaricum, Tartras kalico-stibicus, Tartras oxyduli Stibii et Potassæ, Kali stibico-tartaricum. Potassio-tartrate of Antimony, emetic tartar.

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Let three parts of oxide of antimony, free from arsenic, and reduced to a subtle powder, and four parts of powdered and purified tartar (bitartrate of potash) be stirred in a porcelain dish with water till it becomes a pulp; then let it be heated to + 60 to 70° R., and be kept at this temperature for some hours, adding as much water as there is occasion, that it may fill up about the same measure, till a proof taken out, dissolves itself almost wholly in 15 times as much of cold water. Now it is poured over with 6 to 8 times as much boiling water and boiled for half and hour under continual stirring with a wooden spatula, and then it is filtered still hot. The mother ley, separated from the crystals obtained, is again brought to crystallization by evaporating. All crystals got by degrees are washed with little cold water, again dissolved in 15 times as much of distilled water at common temperature, filtered, and the filtration again evaporated to the point of crystallization.

The crystals obtained must be pure milkwhite and translucent; their form is the rectangular, four-edged pointed column; they are heavy, brittle, of sweetish-metallic taste.

The aqueous solution of this salt is soon subjected to decomposition, therefore we are compelled to make triturations from it.

TAXUS.

Folia s. summitates Taxi. Yew, ew-tree, eugh. From Taxus baccata L. Sex. Syst. Diœcia Monadelphia (Cl. XXII. O. 13). Nat. ord. Coniferæ. Brandt et Ratzeb. I. 46. Düsseld. 88.

The common yew is an arborescent shrub occurring in mountainous forests of Europe and Asia, among us reared in gardens and parks, but which attains a very notable trunk. The leaves (needles) stand comb-shaped, in two rows, are 6 to 9‴ long, and nearly 1‴ broad, a little obtuse, prickly-pointed, entire, above dark-green shining, below yellowish-green, stiff. They are without odour, of lasting bitter, very disagreeable taste.

In March or April we gather the youngest tops of the branches, and prepare from them a tincture after Rule 3, which is of darkbrown colour and bitter taste.

TELLUR.

Tellurium.

A metal-like elementary substance, following next to Sulphur .

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and Selenium, very seldom found native, but occurring combined with gold, silver, and sometimes also with copper and lead. At Schemnitz in Hungaria it occurs combined with Bismuthum, and is obtained from it according to Berzelius, by glowing equal parts of its mineral, carbonate of potash and oil. The glowed mass yields after having been lixiviated Tellurium-potassium, which is decomposed in the air, the potassium oxydizing and letting fall the tellurium. This not yet quite pure oxide of Tellurium is purified by reduction with charcoal and oil in a distilling-apparatus, whereby it is partly sublimed. It appears at common temperature, solid, silver-white, metallic shining, of laminar texture, brittle and therefore easy to be powdered.

Triturations are made from it.

THEA.

Herba et folia Theæ viridis s. Chinensis s. imperialis s. cæsareæ. Tea, imperial tea, hyson skin. From Thea viridis L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Theaceæ.

From the manifold sorts of tea imported from China and Japan under the most different names, divided according to outer appearance into two principal classes, the black and the green tea, the latter, the socalled imperial tea has been selected for medicinal use. This term is however only to be found in very few price-currents of merchants, but the sort termed ***Thée impériale*** (***Tehi,*** Pearl-tea) is a very fine and powerful sort, which we therefore select, as being wider spread than the socalled imperial tea. It consists of the younger and finer leaves rolled together into globules at most as big as peas, of a gray-green colour, and very agreeable, strong odour.

Besides the adulterations with cheaper sorts of tea, which may be perceived by the outer appearance, attention has been directed to a mixture with leaves already extracted and again dried; to detect such fraud, will not be difficult, for, want of odour and smell, darker (not gray) colour, and deviating shape (especially from pearl-tea) must make this perceptible. It is said, that an artificial product has occurred, imitated from tea-dust with solution of gum arabic and dyed green with carbonate of copper; this would be detected immediately by testing an infusum of this tea with reagents for copper. An imitation has also been found of the much

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liked green colour by mechanical admixture of most fine indigo or charcoal (as with coffee). If the suspected tea is poured over with lukewarm water and agitated for some time in a cylindric glass, this adulteration should be easily detected, the indigo and charcoal being washed off and forming deposits in the poured off decoction.

The tincture prepared after Rule 1 is of a dark green-brown colour, and has the peculiar odour and taste of good tea.

THUJA.

Herba s. folia Arboris vitæ s. Thujæ. Arbor vitæ of North-America. From Thuja occidendalis **L.** Sex. Syst. Monœcia Monadelphia (Cl. XXI. O. 8). Nat. ord. Coniferæ.

The beautiful and stately tree, indigenous to North-America, is among us in favour as an ornament in our gardens, especially in burying-places, and is therefore well known. From the Oriental or Chinese arbor vitæ which is far less spread, very like to it, but less efficacious in medicinal virtues, it is distinguished by its branches standing off horizontally, which hang more downwards in large specimens, by its leaves, which are rugged as if compounded of crossing scales, whereas the other has erect branches, turned to the trunk, and smooth leaves, furrowed in the middle; besides it is of much weaker smell.

At the flowering-time, in May, the youngest twigs set with the brownish-yellow, resinous-shining flowers, which emit a balsamic odour are selected, the ligneous ribs are separated by stripping off, and the first used for preparing a tincture after Rule 3 being of a dark, blackish-green colour, and very strong, not disgusting, balsamic odour.

TILIA.

Flores Tiliæ. Lime blossoms. Lime or Linden-tree flowers. From Tilia Europæa L. Sex. Syst. Polyandria Monogynia (Cl. XIII. O. 1). Nat. ord. Tiliaceæ. Düsseld. 429. Hayne III. 46 et 47.

This tree, spread nearly over all Europe, and known everywhere, needs no description. Two chief species occur of it, ***Tilia parvifolia,*** small-leaved linden-tree, winter-lime-tree, mountain lime tree, and

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Tilia grandifolia, large-leaved lime tree, summer lime tree, spring lime tree, or water lime tree.

Both furnish in July their excellent sweet-scented, therefore much liked flowers, long ago used as a household remedy, commonly gathered with the long peduncles and bracts for using them to make tea.

For our use we only apply the flowers freed from the peduncles and full of smell, from which a tincture is prepared after Rule 3, which retains little of the agreeable odour of the flowers.

TINCTURA ACRIS SINE KALI.

Hahnemann's caustic tincture.

His prescription is the following:

Take the most acrid blood-red *Tinctura Antimonii acris* (*Tinctura kalina pharmac. Borussicæ*), saturate it with so much concentrated vinegar, that litmus paper begins to be reddened (that is, that all kali in excess be saturated). Or add to a fresh prepared *Tinctura antimonii acris* so long sulphuric acid in a preportion of 100 drops of water to 150 trops of concentrated sulphuric acid, that the tincture begins to redden litmus, and then the little acid in excess is removed by a very little lime, whereupon the tincture remains as highly coloured as before. *

TONCO.

Fabæ de Tonco s. Tongo s. de Tonca s. Tunca. Tonquin bean. From Dipterix odorata W. Sex. Syst. Diadelphia Decandra (Cl. XVII. O. 4). Nat. ord. Leguminosæ.

Of the two sorts occurring in trade the Dutch beans deserve the preference; they are oblong, straight, or sometimes a

* We do not intend to give a commentary on this medicine arisen from a false chemical idea, like the *Causticum*, and have only stated its prescription because its efficacy has been maintained and confirmed by many, and may also be granted, all theory set aside. But it is evident that it cannot be indifferent whether for saturation of the caustic potash acetic or sulphuric acid is taken, in as much as in the first case acetate, in the latter sulphate of potash will be contained in the solution. For obtaining a uniform condition of all remedies also this arbitrariness must be undone. We therefore fix, that always only *acetic acid* is to be used in preparing this medicine, the attenuations of which are to be made in the common proportion.

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little crooked, 1 to 1½″ long and 2 to 4‴ thick, flat, greasy-shining, brownish-black, and contain below the thin shell a light-brown, mealy kernel, consisting of two seed-lobes, between which in older specimens not seldom the peculiar substance, called Cumarine or tonco camphor, is found in fine crystals, similar to those of benzoic acid, is found in layers. The smell of the beans is strong, coming very near to that of the flowers of melilot, the taste is aromatic, pungent-bitterish.

The tincture prepared after Rule 1 has a straw-yellow colour.

TUSSILAGO.

Radix Petasitidis vulgaris. The root of the great petasides or butter-bur. From Tussilago Petasites L. Sex. Syst. Syngenesia Superflua (Cl. XIX. O. 2). Nat. ord. Compositæ. Düsseld. 238. Hayne II. 17 et 18.

This stately plant is to be found in moist meadows and on ditches and pools all over Europe. It distinguishes itself already from afar by its very large leaves, having 12 to 18″ in the long diameter, being long-petiolate, sinuously rounded, unequally dentated, and with the surface above green, below slightly set with felt. The flowers, appearing in March and April at the same time with the young leaves, stand upon a trunklike scape, clothed with lanceolate scales, which is several feet high; they form a tightly compact thyrsus (becoming later loose by elongation of the scape) of pale purple red compound flowerets.

The root, 1 to 2′ long, 1 to 2″ thick, branched, above tuberous, outside brown, inside incarnate, has a strong, disgusting aromatic taste. In the flowering-time fresh dug out, it is used for preparing an essence after Rule 2, which is of brownish colour and has no smell.

ULMUS.

Cortex Ulmi interior s. pyramidalis. The inner bark of the elm-tree. From Ulmus campestris and Ulmus effusa L. Sex. Syst. Pentandria Digynia (Cl. V. O. 2). Nat. ord. Ulmaceæ. Göbel I. 20. Düsseld. 103 and 104. Hayne III. 15 and 17.

Both very stately trees partly grow wild in forests all over Europe, partly they are also planted in avenues of trees and gardens. They attain a height of 60 to 80′; the bark is smooth and

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darkgray, that of the younger branches brown. The small green-red flowers appear fasciculated-aggregate at the extreme branches in March before the leaves, and are the best means for distinguishing the two species; for *Ulmus campestris* has very short peduncles of equal length; *Ulmus effusa* has longer peduncles of unequal length. The leaves stand alternate in two rows, on very short petioles, are oval or reversed ovate, short pointed, unequal and doubly dentate, stiff and rough, above darkgreen, below paler.

From one or the other species, both having the same constituents, the bark is gathered in the first spring-time, for which purpose by preference young, but not too thin branches are to be selected. They are freed from the epidermis and one part of the peculiar rindsubstance, so that only more of the bast remains, which has, when dried, at the outer side a red-brownish, cinnamonlike colour, on the inner side the colour is lighter.

We prepare a tincture from it after Rule 3 of rather dark colour and somewhat astringent taste.

URTICA.

Herba Urticæ minoris. Common nettle. From Urtica urens L. Sex. Syst. Monœcia Tetrandria (Cl. XXI. O. 4). Nat. ord. Urticaceæ.

This plant, wellknown and spread everywhere, is easily distinguished from its related species *Urtica dioica* (great common nettle), by the small, ovate, incised serrato-dentate leaves, having below five nerves, by the light-green colour, and by the in general much smaller form of the whole plant. It blossoms from July to October, the ripe seeds are gathered, freed after drying as well as possible from the green involucres, and then the small, pale gray-yellowish, smooth grains are used for preparing a tincture after Rule 1, being of pale yellow-green colour.

UVA URSI.

Folia s. herba Uvæ Ursi. Bear's whortle berry, strawberry-tree, arbute-tree, red-wort. From Arbutus Uva Ursi L. Sex. Syst. Decandria Monagynia (Cl. X. O. 1). Nat. ord. Ericineæ. Hayne IV. 20. Düsseld. 215.

This plant spread over Europe, Asia and America grows on dry heaths, in pineforests and on sunny, stony places. It is a

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small, elegant shrub, with branches 1 to 3′ long and decumbent, which are set with whitish hair when young. The short-petiolate leaves, are reverse-ovate, at the base narrower, on the lower side netlike veined, leatherlike, shining, entire, evergreen. The white-reddish, blown up, globose flowers sit on short red peduncles, and stand at the end of the branches in small, a little bent racemes. The leaves, to be gathered about autumn, contain much tannin making iron blue (the characteristic distinguishing them from similar leaves).

VALERIANA.

Radices Valerianæ minoris s. sylvestris. Wild Valerian, capon's tail. From Valeriana officinalis. Sex. Syst. Triandria Monogynia (Cl. III. O. 1). Nat. ord. Valerianaceæ. Göbel II. 36. Hayne III. 32. Düsseld. 254.

The common or small valerian is a perennial plant spread over all Europe, growing on meadows, in clear, moist woods, on the sides of brooks, but most luxuriantly on the slopes of fore-Alps. It attains a height of 6′, has a single, smooth or also little haired stem, feathered, below petiolate, above sessile leaves, with lanceolate, dentate leaflets. The flowers are umbels standing at the end, with white-reddish, not ill-scented, funnelshaped flowerets. The root, the only officinal part, consists of an oblong, roundish-rugged root stock, about 1″ long, in front obtruncated, which is grown over with fibres, running out to all sides, standing tight, to 6″ long, round like a stalk, set with fibrils. Its colour is light-brown or reddish-gray when fresh, darker to blackish-brown, when dried, under the epidermis lighter. Smell penetrating, peculiar, camphorlike, taste similar, afterwards a little bitter.

The root drawn by commerce from the Alpine countries deserves the preference to any other; we prepare from it a tincture with *diluted* spirit of wine after Rule 1, being of reddish-brown colour and very powerful smell and taste.

VERATRINUM.

Veratrum, Veratrina. Veratria.

From the seeds of *Veratrum Sabadilla* this alkaloid is prepared in the following manner:

After having freed the seeds from all tough, light covers, it is reduced to a coarse powder, and this is done, for evading the

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most injurious dust, under adding some spirit. This powder is then digested for some hours with three times its quantity of strong spirit, acidulated with little pure sulphuric acid, at a temperature that comes near to boiling. This operation may be repeated once or twice with two thirds of the former quantity of spirit. After having pressed out the last extraction, all the liquids together are subjected to distillation, until the spirit is drawn over. The remains, after adding a proper quantity of water are boiled so often in a porcelain dish, as caustic soda causes still a precipitate in a proof taken from the decoction. To the mixed liquids, concentrated by cautious evaporation, now caustic soda is added, as long as a precipitate ensues. This precipitate collected upon a filter, and washed with pure water, is soon dried completely with the proper warmth. For removing the Sabadilline as well as the colouring matter mixed with it, the dry precipitate is now mixed with equal parts in weight of purified animal charcoal, and the mixture macerated with six times as much of ether, frequently agitating, which treatment is repeated after pouring off the first extraction, with half as much ether. The obtained ethereal solutions are filtrated, the ether taken off by distillation, and the residue dissolved in twelve times as much water acidulated with $^1/_{24}$ of rectified sulphuric acid, filtered, and decomposed under stirring by caustic ammoniac to excess.

The precipitate got in this way is pure Veratria, which is dried with gentle warmth, after having been often washed, and will now be a loose, yellowish-white, a little glittering, inodorous powder, of burning acrid taste, the dust of which is to be evaded most carefully, for it causes vehement incessant sneezing.

A solution in spirit of wine is to be made of it.

VERATRUM.

Radices Hellebori albi s. Ellebori s. Veratri albi. White hellebore, sneeze-wort. From Veratrum album L. Polygamia Monœcia (Cl. XXIII. O. 1). Nat. ord. Veratreæ (Melanthaceæ). Göbel II. 21. Brandt et Ratzeb. I. 5. Düsseld. 46.

This plant is indigenous to most of the Alps and fore-Alps of Europe. It has a subterranean, perennial, rootlike stock, which we obtain in trade commonly under this name; its shape is obtuse, knotty, some inches long and one inch thick, wrinkled, rather verrucose, above set with numerous rootfibres, to be found mostly

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only in remains. The colour of the epidermis is blackish-brown or gray, the pith is yellowish-white, tough, resinous. Its smell is inconsiderable, but the dust causes the most vehement sneezing; the taste is acrid, burning and lasts long.

From the dry rootstock we prepare a tincture after Rule 1, which is of yellow brown colour and the taste mentioned.

VERBASCUM.

Flores et herba Verbasci. Mullein, wool-blade, torch-weed, high-taper, (cow's) longwort. From Verbascum Thapsus L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Verbascineæ. Hayne XII. 38. Düsseld. 158—159.

This stately perennial plant is found almost all over Europe on dry, sunny places, especially frequently in sandy soils and on rocks. The quite straight, erect, ascending stem, sprouting forth from a crown of petiolate, ovate-oblong root-leaves, is, as a rule, quite single, attains a height to 6', is thick, round, above angular by the thick flower-raceme, till there set, with decurrent, thick, soft, leaves, which are pale gray-green. The whole plant is tightly set with white felt or woolly haired. The flowers form a long racemelike, compressed spike, are short-peduncled; the beautiful goldyellow corol is not larger then ½", funnelshaped, more frequently closed than open, whereby it is easily distinguished from the very similar *Verbascum thapsiforme*, which is more than as big again, and has large flowers, wheelshaped diffuse. The anthers are white-woolly with vermilion pollen.

At the flowering-time in July the flowers and leaves are collected at the same time, and from them is prepared a tincture after Rule 3 of dark yellow-brown colour and little herblike smell, which possesses nothing of the agreeable of the dried flowers.

VERBENA.

Herba Verbenæ s. Verbenæ maris. Vervain, vervin, simpler's joy, iron-wort, pigeon's herb. From Verbena officinalis L. Sex. Syst. Didynamia Angiospermia (Cl. XIV. O. 2). Nat. ord. Verbenaceæ. Hayne V. 42.

The plant spread everywhere grows near roads, on heaps of rubbish, near old walls and waste places near villages. The stem is 1 to 2' high, herbaceous, four-sided, diffused branchy patent,

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stiff bristly. The opposite leaves run cuneiformly into the petiole, are lyrate, feathered or partite, incisedly serrated, rough, dull gray green. The violet or dull reddish-white flowers stand at the tops of the branches in thin spikes, which are 1 to 2″ long.

In the flowering-period, which lasts during the whole summer, we collect the plant without the root, to prepare from it, because it yields little juice, a tincture after Rule 3, having a very dark colour, no smell, and little astringent taste.

VINCA.

Herba Vincæ pervincæ s. Vincæ minoris. Periwinkle. From Vinca minor L. Sex. Syst. Pentandria Monogynia (Cl. V. O 1). Nat. ord. Apocyneæ.

This evergreen, shrublike, creeping plant is very much spread and likes shaded woods, and stony slopes or hedges, is also frequently reared in gardens for ornament. On thin, round, decumbent, radicant stems are opposite in intervals the nearly leatherlike, short-petiolate, ovate-lanceolate, above shining darkgreen leaves. The flowers appearing in April and May stand single in the axils, on long peduncles; they are large, funnelshaped, blue or violet.

The herb collected during the flowering-period is prepared for essence after Rule 2, which is of a brown-green colour.

VIOLA.

Flores Violarum s. Violæ odoratæ s. Violæ Martiæ. Sweet-scented violet, single March-violet. From Viola odorata L. Sex. Syst. Pentandria Monogynia (Cl. V. O. 1). Nat. ord. Violariæ. Hayne III. 2. Düsseld. 386.

The well-known perennial is found all over Europe, also in Asia, growing wild in shady and moist places, and also cultivated in gardens. The distinguishing characteristics of the true violet are: 1. the well known exceedingly agreeable and strong smell. 2. the dark colour and smaller size of the flower. 3. the runners. 4. the single not branched stem.

The whole blossoming plant along with the root, gathered in March and April is used for preparing an essence after Rule 2, which has a dark-brown colour, a slight smell of violets, but distinctly a taste similar to that of ipecacuanha.

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ZINCUM.

Stannum Indicum. Zinc, gold marcasite, spelter.

The East India zinc *(Zincum orientale)* occurring in trade is the purest, though not to be regarded as chemically pure. It has a blueish gray-white colour, strong brightness, crystallizes in foursided columns, has a radiated-laminar texture and clear sound; it is so brittle, that it bears powdering under certain circumstances.

This metal, coming in blocks of 18 to 20 pounds is repeatedly subjected to melting under addition of sulphur, often stirring the liquid mass with a wooden spatula, as long as formation of dross is perceived. When the sulphur burns off at the surface without forming new scoria, then let the mass become cool and separate the dross from the pure metal.

Then again molten and poured out in a heated polished iron mortar, it bears pulverization; the coarser parts are separated from the more subtle, in order to repeat the same process with them, until a sufficient quantity of powdered zinc is obtained, the most subtle parts of which are to be separated in the known way, by sifting through fine linen.

Zinc also may be reduced in its metallic form from its salts, when a very concentrated solution of chloride of zinc is brought in contact with pure zinc-bars in a proper vessel having a wide mouth (conf. the Note under the head "*Cadmium*" p. 72) in such a manner, that they are hung up on threads suspended in it. Over the layer of chloride of zinc, only 1 to 1½" high, a layer of pure water is cautiously poured in such a way, that both the liquids do not mix. At the place, where the layer of water rests over the zinc-ley, the separation of metallic zinc begins in the form of gray lustreless warts, depositing around the bars. After some days, and when the bars are agitated, a part of the metal reduced in this way separates, new layers lay themselves on, and the operation continues until the whole zinc-ley is decomposed, or the zinc-bars, becoming sensibly thinner by dissolution are broken and fall down, when they are replaced by new ones, to bring the reduction to its end.

The zinc obtained in this way is then washed, finally agitated with a proper quantity of strong alcohol (for removing the moistness) and collected upon a filter. The exsiccation must be effected

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quickly (as has been mentioned under the head "*Cuprum*"), if the powder is to remain pure metal.

Triturations are made from it.

ZINCUM ACETICUM.

Acetas Zincicus. Acetate of zinc.

Two parts of pure sulphate of zinc are dissolved in four times as much hot distilled water, and poured, continually stirring, into a solution of $2\,^1/_2$ parts of carbonate of soda in hot water, containing about $^1/_{12}$ of this salt.

The precipitate obtained, very white, is washed in the vessel of precipitation as long as is necessary, and then collected upon a filter. From the precipitate still moist and pulpy any quantity is dissolved with hot concentrated vinegar to perfect neutralization and the acetate after filtering set aside for crystallization. The crystals obtained are white, rhombic tables, shining like mother-of-pearl, decaying a little in the open air.

A watery solution in common proportion is to be made from them.

ZINCUM HYDROCYANICUM.

Cyanetum Zinci s. zincicum, Zincum cyanatum, Hydrocyanas Zinci. Cyanite of zinc, Hydrocyanate of zinc.

A solution of acetate of zinc, prepared according to our prescription, is decomposed by diluted hydrocyanic acid. The precipitate obtained is carefully washed, separated by filtering from the water and dried. It is a dazzling white powder, to be preserved in blackened glasses, protected from light.

Triturations are to be made from it.

ZINCUM OXYDATUM.

Lana philosophica, Nihilum album, Pompholyx, Calx Zinci, Flores Zinci, Zincum album, Oxydum Zinci. Flowers of zinc, oxide of zinc, zinc-white. *

* The history of the original preparation of the oxide of zinc as well as the experiences and observations of the physicians relating to the differently certain efficaciousness of this formerly so high valued remedy, lead to the preference to the remedy prepared in the dry way before the manner in the humid way (newly introduced in the pharmacopœias), though we must own, that the first is rarely or never obtained as chemically pure as the latter.

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Any quantity of the purest metallic zinc is heated to a feeble white-heat in a covered Hessian crucible, laid upon the coal in an inclined situation. After taking off the cover and touching the melting surface of the metal it flames with a dazzling white colour, oxydizing at the same time.

The oxide, separating in loose, cotton-like flakes floats partly upon the melting surface of the metal, partly it sticks to the sides of the crucible, is also carried away by the heat. It is cautiously taken away with an iron spatula, lest melting metal is swept off along with it, and is collected into a porcelain mortar.

For separating some metallic parts mixed possibly with the oxide, it is to be triturated afterwards with water and carefully washed, taking care at the same time to obtain only the specific light, perfect oxide, and to remove the gray residue. It is for the purpose, to glow the dried preparation again in a closed crucible and then to preserve it in well closed vessels from access of air. Let it be a white, loose, odourless and tasteless powder.

There are triturations to be made of it.

ZINCUM SULPHURICUM.

Vitriolum album s. Zinci, Sulphas Zinci cum Aqua. White vitriol, Copperas, Sulphate of zinc.

Let be prepared a solution of the best purest zinc metal in diluted sulphuric acid, which is boiled from half to one hour, after having added some strips of rolled zincplate, until one is convinced that the solution is perfectly neutralized.

This solution is filtered still warm into a sufficiently roomy bottle with a narrow neck, that the lye may fill only two thirds of it; in this filtration is thrown chlorine-gas, until the void space above it is pretty well filled. After having removed the gas-evolving apparatus, the mouth of the bottle is closed and the liquid well mixed with the chlorine-gas by vehement agitation.

From the still warm liquid by adding carbonate of soda a small part of oxide of zinc is separated, and the whole brought to boiling in a porcelain dish, by which all oxide of iron contained in the solution is separated, in the place of which the oxide of zinc combines with the acid. For being sure that all iron is separated, an excess of oxide of zinc must be perceived at the end of the operation.

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The afterwards settled and refrigerated liquid is filtered under addition of a little pure sulphuric acid in excess, and evaporated to the point of crystallization. By stirring from time to time the crystallization be interrupted, so that only small crystals can be formed, which are separated from the mother liquor, dropped off, and dried on white bibulous paper. They are of dazzling-white colour, most astringent metallic taste, tender needles well to be preserved from access of air.

We make solution with water from them after the known proportion.

ZINGIBER.

Radices Zingiberis s. Zinziberis s. Gingiberis albi s. nigri s. communis. Ginger. From Amomum Zingiber L. Sex. Syst. Monandria Monogynia (Cl. I. O. I.). Nat. ord. Scitamineæ.

The roots of the ginger-plant brought us from the Indies and China as a drug form hands (tubers) 1 to 2″ long and 1″ broad, flatpressed, hand-shaped, divided in lateral branches, which are hard, heavy, tight, resinous-shining, of strong, aromatic odour and hot, biting taste, outside of blackish-gray or brownish, inside of yellowish-white colour. The quite white ginger can not be used for medicinal porposes, because the supposition is against it, of having been bleached by art.

We prepare a tincture of it after Rule 1 of yellow colour and strong smell and taste.

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A CATALOGUE

of all the plants growing wild or cultivated in Germany as well as of some animals, being used in homœopathic medicine according direction of this work, arranged in the manner, in which the season offers them. *

February.

Helleborus
Mezereum.

March.

Asarum
Sambucus (Cortex intern.)
Tussilago
Ulmus.

April.

Aristolochia
Arum
Chelidonium
Dulcamara
Geum
Juncus pilosus
Pæonia
Prunus spinosa
Pulsatilla
Sabina
Taxus
Viola.

May.

Actæa
Allium
Apis
Arnica
Asparagus
Cistus
Colchicum (semen)
Cyprinus
Fragaria
Gratiola
Jacea
Lamium

* Compare the Note p. 25.

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Meloe
Mercurialis
Ononis
Oreoselinum
Paris
Pinus
Prunus padus
Ranunculus bulbosus
Raphanus
Rhus
Rosmarinus
Scrophularia
Sedum
Taraxacum
Thuja
Vinca.

June.

Aconitum Napellus
Æthusa
Anagallis
Belladonna
Branca ursina
Calendula
Cannabis
Chamomilla
Cicuta virosa
Clematis
Cotyledon
Dictamnus
Digitalis.
Heliotropium
Hyoscyamus
Juglans
Ledum
Millefolium
Nymphæa
Pimpinella
Ranunculus acris
„ flammula
Ruta
Sambucus (flores).

July.

Absinthium
Aconitum Lycoctonum
Agnus castus
Atriplex
Badiaga
Carduus Benedict.
Chenopodium
Coccinella
Conium
Drosera
Euphrasia
Gentiana cruciata
Helianthus
Hypericum
Juncus effusus
Lactuca virosa
Majorana
Marum verum
Oleander
Ranunculus sceleratus
Secale cornutum
Tabacum
Tanacetum
Tilia
Verbascum
Verbena.

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August.

Aranea
Colchicum (radix)
Elaterium
Laurocerasus
Lolium
Lupulus
Lycopodium
Petroselinum
Solanum nigrum
Stramonium.

September.

Aristolochia
Bovista
Cyclamen
Evonymus
Filix
Menyanthes
Symphytum
Uva ursi.

October.

Armoracia
Arum
Berberis
Bryonia
Dulcamara
Phytolacca
Solanum Lycopersicum
Urtica.

November.

Artemisia.

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INDEX.

	Page
Absinthium	35
- majus	—
- rusticum	—
- vulgare	—
Acacia German	166
Acetas Barytæ	65
- baryticus	—
- calcicus	73
- cupricus	100
- ferricus	107
- hydrargyrosus	140
- manganosus	137
- morphicus	148
- Morphii	—
- oxydi Cupri	100
- - Ferri	107
- Plumbi crystall.	164
- plumbicus	—
- Zincicus	203
Acetate of baryta	65
- of copper	100
- of copper crystallised	—
- of copper neutral	—
- of iron	107
- of lead	164
- of lime	73
- of manganese	137
- of mercury	140
- of morphia	148
- of zinc	203
Achillea Millefolium	146
Acid arsenious	59
- benzoic	35
- chlorhydric	38
- cyanhydric	36
- hydrochloric	38
- - watery	—
- hydrocyanic	36
- hydro fluoric	37

	Page
Acid hydro-nitric	39
- hypocarbonic	—
- marine	38
- molybdic	—
- muriatic	—
- nitric	39
- - hydrate of	—
- of bones	40
- of sugar	39
- of wine	41
- of woodsorrel	39
- oxalic	—
- oxymuriatic	88
- phosphoric	40
- Prussic	36
- saccharine	39
- sparry	37
- sulphuric	41
- siliceous	182
- tartaric	41
- tartarous	—
- vinous	—
- vitriolic	—
Acidum acetosellæ	39
- arsenicosum	59
- arsenicos. vitreum	—
- azoticum	—
- benzoicum	35
- benzoylicum	—
- Borussicum	36
- carbonosum	39
- fluoricum	37
- hydrochloricum	38
- hydrocyanicum	36
- hydrofluoricum	37
- hypocarbonosum	39
- iodo-hydragyr.	141
- molybdænicum	38
- molybdicum	—
- muriaticum	—

	Page
Acidum muriaticum oxygenatum	88
- nitri	39
- nitricum	—
- ossium	40
- oxalicum	39
- phosphoricum	40
- phosphori perf.	—
- sacchari	39
- salis	38
- septicum	39
- silicum	182
- sulphuricum	41
- - purum	—
- sulphuris	—
- tartaricum	—
- vitrioli	—
- zooticum	36
Aconite	42
Aconitum Lycoctonum	43
- Napellus	42
Actæa spicata	43
Ærugo crystallisata	100
Æther phosphoratus	160
Æthusa cynapium	44
Agaric	—
Agaricus muscarius	—
Agnus castus	45
Alabastrum	77
Album hispanicum	67
Alcohol of sulphur	45
- sulphuris	—
Alkali caustic volatile	48
- vegetable	126
Fluor le Sage	48
minerale aëratum	150
- - muriatos.	151
- - sulphuric.	152
- - vitriolic.	—
vegetabile aëratum	126

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Original from UNIVERSITY OF MICHIGAN

	Page
Alkali vegetab. nitratum	28
– volatile	148
– – salitum	49
– – siccum	48
All-heal	114
Allium sativum	46
Aloë	—
Aloë lucida	—
– soccotarina	—
– spicata	—
– succotrina	—
All-Saints'wort	121
Alum crystallised	46
– earth	56
Alumen crudum	46
Alumina	56
Ambarum cineritium	47
Ambergris	—
Amblygonite	133
Ambra ambrosiaca	47
– cinera	—
– grisea	—
– nigra	—
– vera	—
Ammonia carbonate of	48
– hydrochlorate of	49
– muriate of	—
– neutral phosphoric	50
– phosphate of	—
– pura	48
– sesquicarbonate of	—
– solution of	—
Ammoniac caustic	—
– gum	47
– sal	49
Ammoniacum	47
Ammonio-chloride of mercury	143
Ammonio-nitrate of oxide of suboxide of mercury	144
Ammonium aëratum	48
– carbonicum	—
– causticum	—
– liquidum	—
– muriaticum	49
– phosphoricum	50
– purum	48
Amomum Zingiber	206
Anacardium	50
Anagallis arvensis	—
Anemone meadow	166
– pratensis	—
– pulsatilla	167
Angelica Archangelica	51
Angustura	—
– bark poisonous	70
– – spurious,	—
Animal charcoal	80
– oil, Dippel's	155
Anise Indian	52
Anise stellated	52
Anisum stellatum	—
Ant, wood–, red–,	112
Anthos	172
Anthrakokali	53
Antimonium	54
– bisulphurat. auran-	
tiac.	189
– crudum	54
– sulphuratum	—
– – aurantiacum	189
– tartaricum	192
– tartarisatum	—
Antimony	54
– golden sulphur of	189
– oxysulphuret of	—
– potassio-tartrate of	192
– sesquisulphuret of	54
– sesquisulphuret of	129
– sulphuret of	54
Apis mellifica	—
Apium petroselinum	159
Apple of love	182
– thorn	186
Apyrite	133
Aqua Ammoniae purae	48
– chlorata	88
– fortis	39
– oxymuriatica	88
Aquatic filipendula	154
Arabian coffee	94
Arach, stinking	62
Aralia nudicaulis	176
Aranea Diadema	55
Arbor vitae	195
Arbute tree	198
Arbutus Uva ursi	—
Archangel	132
Argenti nitras	56
Argentum metallicum	55
– nitricum	56
– purum	55
– vivum	145
Argilla pura	56
Argillaceous earth	56
Aristolochia Clematitis	57
– serpentaria	181
Aristolochy	57
Armoracia	—
Arnica montana	58
– plaister	59
Arseniate of lime	74
– of copper	101
Arsenic	59
– sesquisulphuret of	63
– white oxyde of	59
– yellow	63
Arsenious acid	59
Arsenicum album	—
Arsenicum citrinum	63
– oxydatum	60
Artemisia common	59
– Absinthium	35
– Contra	90
– Vahliana	—
– vulgaris	60
Arum poisonous	73
– maculatum	60
– seguinum	73
Asa fœtida	61
Asarabacca	—
Asarum europæum	—
Aselli	147
Asparagus	62
– officinalis	—
Athamanta Oreoselinum	157
Atriplex olida	62
Atropa Belladonna	66
Auripigmentum	63
Aurochloras chloronatricus	64
Auro-Natrium chloratum	—
Aurum chloratum	—
– foliatum	63
– hydrochloratum	64
– metallicum	63
– muriaticum	64
– – natronatum	—
– pigmentum	63
– salitum	64
– sulphuratum	—
Avens	114
Baccae Cubebarum	99
– levantinæ	93
– orientales	—
Badiaga	65
Badiane	52
Balsamus brasiliensis	97
— Copahu	—
— Copaiva	—
— de Cobaiba	—
Bane-berry	34
Barb or barbel, common	102
Barbadoes tar	158
Barberry	67
Baryta, Acetate of	65
— Carbonate of	—
— — muriate of	66
Baryta acetica	65
– carbonica	—
– hydrochlorica	66
– muriatica	—
Barytes aceticus	65
– carbonicus	65
– muriaticus	66
Baryum chloratum	—
– chloride of	—
– oxydatum aceticum	65

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	Page
Baryum oxydatum carbonicum	65
- - muriaticum	66
Bastard Dittany	102
Bear's whortle berry	198
- wort	69
Beavers' cod	83
Beedys' eyes	124
Belladonna	66
Benzoic acid	35
Benzoin flowers of	—
Berberis vulgaris	67
Betony, mountain	58
Biboras natricus	68
Biborate of Soda	68
Bichloretum Ferri	110
- Hydrargyri	141
Bichloride of mercury	141
Bichromas kalicus	126
Bichromate of potash	—
Biiodas hydrargyricus	144
Biiodide of mercury	—
Binoxide of manganese	138
Bird cherry	166
Birth wort	57
Bismuth	68
- magistery of	—
- oxide of	—
- trisnitrate of	—
- white	—
Bismuthum	67
- subnitr. praecip.	—
Bisulphuret of mercury	91
Bisulphuretum Hydrargyri rubrum	—
- Natrii	151
Bitter cucumber	95
Bitter purging salt	136
- sweet	104
Bitumen liquidum	158
Black lead	116
- - ore	147
- oxide of mercury	144
- sulphuret of gold	64
- thorn, common	166
Blessed thistle	81
Blind nettle	131
Blister flies	79
Blistering-flies	—
- crowfoot	169
Blite stinking	62
Blood-root	175
Bog-beans	139
Bone ashes	76
- charcoal	80
- earth	76
Bones, acid of	—
Bonplandia trifoliata	51
Bore tree	174
Boras Sodæ	68
Borax raffinata	68
- veneta	—
- Venitian	—
Bovista officinalis	—
Branca ursina	69
Brazilian bean	161
Bromate of potash	128
Brometum kalicum	128
- Kalii	—
Bromide of potassium	—
Bromina	69
Bromine	69
Bromium	—
Bromum	—
Bromuretum potassic.	128
Brown-wort	177
Brucea ferruginea	70
Bryonia alba	71
Bryony wild	71
Buck-beans	139
Bulbi Allii	46
- Colchici	94
Bull-fist	68
Bund	68
Burned hearts' horn	76
- lime	75
Burnet saxifrage	161
Burning crowfoot	168
Burnt sponge	184
Butter-bur	197
- -cup, bulbous-rooted	168
- cup marsh	168
- - small	167
Cabaric	61
Cadmium	71
Cafura	77
Cahinca	78
Cainca	78
Caladium	73
Calcareous earth	74
Calcaria acetica	73
- arsenicica	74
- carbonica	—
- caustica	75
- hypoiodosa	—
- iodata	—
- phosphorica	76
- pura	75
- sulphurata	76
- sulphurica	77
Calcined mercury	144
Calcium oxide of	75
- oxydatum	—
- sulphuratum	76
Calendula officinalis	77
Calf's-foot	60
Calisaya	86
Calomel	142
Calomelas	—
Calx	74
- acetica	73
- Bismuthi	67
- phosphorata	76
- usta	75
- viva	—
- Zinci	204
Camfor	77
Cammock	156
Campana	166
Campeachy-wood	119
Camphor	77
Camphora chinensis	—
- japonica	—
- officinalis	—
Cancer Astacus	78
Canella Zeylanica	91
Canfer	77
Cannabis indica	79
- sativa	78
Cantharides	79
Capivi balsam	97
Caphura	77
Capon's tail	199
Capsicum common	80
- annuum	80
Carbamide of Dumas	48
Carbo animalis	80
- Carnis	80
- mineralis	116
- Spongiæ	184
- vegetabilis	84
Carbonas Ammonii solidus	48
- Barytæ	65
- baryticus	—
- Calcariæ	74
- calcicus	74
- cupricus	101
- ferricus	108
- Kali	126
- kalicus	126
- Lixiviæ	—
- Magnesiæ	135
- magnesicus	—
- manganosus	137
- natricus c. aqua	150
- plumbicus	165
- stronticus	186
Carbon mineral	116
- sulphuret of	45
Carbonate of ammonia	48
- of baryta	65
- of copper	101
- of iron	108
- of lead	165
- of lime	74
- of lithion	132
- of manganese	137
- of magnesia	135

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Carbonate of nickel 152
- of potash 126
- of soda 150
- of strontia 186
Carboneum sulphuratum 45
Carburet of iron 146
- of sulphur 45
Carburetum Ferri 146
- Sulphuris 45
Carduus benedictus 84
- marianus 82
Carex arenaria 176
Carthusian powder 129
Cascarilla 82
Cashew nut 50
Cassia acutifolia 180
- elongata —
- lanceolata —
- obovata —
- obtusata —
- Senna —
Castor 83
- Fiber —
Castoreum bavaricum —
- moscoviticum —
- russicum —
- sibiricum —
Cathartic nut, Indian black 125
- salt of Glauber 152
Cat tyme 138
Caustic ammoniac 48
- barley Indian 173
- Hahnemann's 83
- lime 75
- tincture of Hahnemann 196
- volatile alkali 48
Causticum 83
Cayenne pepper 80
Celandine 85
Centaurea benedicta 84
Cepa marina 176
Cephaëlis Ipecacuanha 123
Cerussa 165
- nigra 146
Ceruse 165
Cevadilla 173
Chalk 74
Chamomile 84
Chamomilla —
Charcoal animal 80
- bone —
- flesh —
- leather —
- vegetable 84
- wood —
Chaste tree 45
Chelidonium majus 85
Chenopodium glaucum 85
- olidum 62
- vulvaria 62
Cherry Laurel 132
Cheslip 147
Chilly pepper 80
China clay 129
China 86
- amaro-aromatica 51
- falsa 82
Chininum hydrochloricum 86
- muriaticum —
- phosphoricum 87
- salitum 86
- sulphuricum 87
Chinium sulphuricum —
Chiococca racemosa 73
Chloras kalicus 127
- magnesicus 136
- platinicus 163
- Potassae 127
Chlorate of potash —
Chloretum Ammoniæ 49
- auricum 64
- Baryi c. aqua 66
- hydrargyricum 141
- hydrargyrosum 142
- natricum 151
- Natrii —
Chlorhydric acid 38
Chloride of Baryum 66
- of gold 64
- of mercury 142
- of Soda 151
- of Platinum 163
Chlorinated water 88
Chlorine liquid —
Chlorinum —
Chloroforme 87
Chlorum 88
Christmas rose 120
Cicuta virosa 89
Cina 90
Cinchona bark 86
- cordifolia —
- lancifolia —
Cinchonia, sulphate of 90
Cinchoninum sulphuricum —
Cinchonium sulphuricum —
Cinnabar 94
Cinnabaris —
Cinnamon —
Cinnamomum verum —
- Zeilanicum —
Cistus canadensis —
- Helianthemum —
Clavus secalinus 178
Clematis erecta 92
Clubmoss seed 134
Clutia Eluteria 82
Cnicus arvens. 92
Coccionella septempunct. 92
Cocculus 93
Coccus cacti —
Cochineal —
Cochinella —
Cochinilla —
Cochlearia Armoracia 57
Cockleweed 133
Cockroaches 147
Cockspur rye 178
Coffea arabica 94
Coffee Arabian —
- Mocha —
Cohosh 43
Colchicum autumnale 94
Colocynth 95
Colocynthis —
Colombo root —
Color indicus 122
Columbo 95
Comfrey 191
Common black henbane 121
- - thorn 165
- Capsicum 80
- Chamomile 84
- dwale 66
- elder 174
- herb Christopher 43
- male fern 112
- nettle 198
- night-shade 183
- parsley 159
- rue 173
- salt 151
- wild henbane 121
Coni Humuli 134
- Pini 162
Conium maculatum 96
Consound 191
Convolvulus Jalappa 124
Copahu 97
Copaiba balsam —
Copaifera officinalis —
Copaiva —
Copper acetate of 100
- arseniate of 101
- carbonate of —
- metallic 99
- pure —
- sulphate of 101
- vitriol of 101
Copperas 111. 205
Coral red 97
Corallia rubra —
Corallum rubrum —
Corallium rubrum —

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Original from UNIVERSITY OF MICHIGAN

	Page
Cornu cervi ustum album	76
Corrosive sublimate of mercury	144
Cortex Angosturæ	51
- Angustinus	—
- Angustur. falsus	52, 70
- - ferrugineus	70
- - ostindicus	—
- - spurius	52, —
- - verus	51
- Calisaya	86
- Cascarillæ	82
- Cerasi Padi	166
- - racemosi	—
- Chacarillæ	82
- Chamelacæ	146
- Chinæ flavæ	86
- - regius	86
- Cinnamom. acut.	91
- Cocognidii	146
- Cocci gnidii	146
- Gasgarillæ	82
- internus Sambuci	174
- Laureolæ	146
- Mezerei	—
- nucum Juglandis	125
- Pruni Padi	166
- Pseudoangusturæ	70
- Punicæ Granati	116
- radicis Granator.	—
- Mali Punicæ	—
- Sassafras	175
- Thymelææ	146
- Ulmi interior	197
- - pyramidalis	—
Cotyledon umbilicus	97
Court plaister	59
Cow's longwort	201
- parsnip	69
Crap	133
Crawfish	78
Creasoté	129
Creosote	—
Creosotum	—
Crocus, opening of iron	108
Crocus austriacus	98
- de Gatinois	98
- Martis aperitivus Stahlii	108
- orientalis	98
- sativus	—
Cross-spider	55
Cross-wort Gentian	113
Croton Eluteria	82
- purging	98
- Tiglium	—
Crow-flower	57
Crow-foot blistering	169
- -bulbous-rooted	168
Crow-foot burning	168
- -marsh	169
- -meadow	167
- -small	168
Crystallized alum	46
- soda	150
Crystals of verdigris	100
Cubebæ	99
Cubebpepper, Cubebs	—
Cubical nitre	154
Cucumber, bitter	95
- squirting	105
Cucumis agrestis	—
- asininus	—
- colocynthis	95
Culinary salt	154
Cuprum aceticum	100
- arsenicosum	104
- carbonicum	—
- metallicum	99
- purum	—
- sulphuricum	104
Cusparia bark	54
Cuttlefish, inky juice of the	184
Cyanetum Zinci	204
- zincicum	—
Cyanhydric acid	36
Cyanide of hydrogen	—
- of zinc	204
Cyclamen europæum	102
- root	—
Cynanchum Arguël	180
Cyprinus barbus	102
Dandelion	192
Daphne Mezereum	146
Darnel	133
Datura Stramoniüm	186
Deadly night-shade	66
Dead nettle	134
Delphinium Staphisagria	185
Deutochloride of gold	64
Deudoioduretum Mercurii	141
Deutosulphas Cupri c. aqua	101
Devil's dung	64
- snuff-box	68
Dictamnus albus	102
Digitalis purpurea	103
Dippel's animal oil	155
Dipterix odorata	196
Disulphate, crystallized of quinia	87
Dittany bastard	102
Dog's bane	43
Doræma Armeniaca	47
Drank	133
Drosera rotundifolia	104
Duck's foot	165
Dulcamara	104
Dust silver	55
Dutch myrtle	132
Dwale, common	66
Dwarf rose-bay	171
Earth-moss seed	134
Ebur ustum nigrum	80
Egg-shells	74
Elaterium	105
Elder	174
Elm tree	197
Emplastrum Arnicæ	59
Emetic tartar	192
Emmet	112
Epsham or Epsom salt	136
Ergota	178
Ergot of Rye	—
Essentia Terebinthin. gall.	156
Eugenia Jambos	105
Eugh tree	193
Euphorbia antiquorum	106
- canariensis	—
- officinarum	—
Euphorbium	—
Euphrasia officinalis	—
Euphrasy	—
Evonymus europæus	—
Ew tree	193
Eye-bright	106
Fabæ arabicæ	94
- brasilienses	161
- de Tonca	196
- de Tonco	—
- de Tunca	—
- febrifugæ	122
- indicæ	—
- levantinæ	94
- Pecurim	161
- Pichurim	—
- majores	—
- Ignatii	122
- Sassafras	161
- Tongo	196
False black Hellebore	43
Fern, common male	112
Ferrum aceticum	107
- carbonicum	108
- iodatum	109
- lacticum	—
- magneticum	110
- metallicum	107
- muriaticum	110
- - oxydatum	—
- oxydat.	108
- - aceticum	107
- - fuscum	108
- oxydulatum carbon.	—
- - fuscum	108
- purum	107

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	Page
Ferrum subcarbonicum	108
- sulphuric. oxydulatum	111
Ferula Asa fœtida	61
Feverfew common	84
Ficus infernalis	125
Fig-wort	177
Filipendula aquatic	154
Filix	112
Fin	156
Fixed nitre	126
Flesh-charcoal	80
Flores Acaciæ german.	166
- - nostratis	—
- Acaciarum	—
- Arnicæ	58
- Benzoës	35
- Chamæmeli	84
- Chamomillæ vulg.	—
- Croci	98
- Doronici germanici	58
- Galeopsidis maculatæ	131
- Lupuli	134
- Sambuci	174
- Sulphuris	188
- Tanaceti	192
- Tiliæ	195
- Urticæ	131
- Verbasci	201
- Violæ martis	—
- - odoratæ	—
- Violarum	-
- Viridis æris	100
- Zinci	205
Flowers of Benzoin	35
- of Sulphur	188
- of Zinc	205
Fluoridium hydricum	37
Fluttering rush	125
Folia Digitalis purpureæ	103
- Laurocerasi	132
- Lobeliæ	133
- Rhododendri chrys.	171
- Rhois radicantis	—
- - toxicodendri	—
- Rorismarini sylv.	132
- Sennæ alexandrin.	180
- Taxi	193
- Thujæ	195
- Toxicodendri	171
- Uvæ Ursi	198
Foliated-gold	63
Fool's parsley	44
Formica rufa	112
Fox-glove purple	103
Fragaria vesca	113
Fraseria caroliniana	96
Fraxinella	102
French mercury	140
Fructus Capsici annui	80
- Colocynthidis	94
- Elaterii	105
- Evonymi	106
- Momordicæ	105
Fungus chirurgorum	68
Fuzz-ball	—
Galiopsis	177
Galipea gusparia	54
- officinalis	—
Gambodge Ceylon	119
Gamboge	—
Garden Angelica	51
- Marygold	77
- parsley	159
- spider	55
- rue	173
Garlick	46
Geber's nitric acid solutive water	39
Geffium	60
Gentiana cruciata	113
- lutea	—
Gentian bitter wort	—
German Acacia	166
Geum urbanum	114
Gil-wort	177
Ginger	205
Ginseng	114
Girasol	120
Glacies Mariæ	77
Glassmakers'-soap	138
Glauber's cathartic salt	152
- spirit of nitre	39
- - of salt	38
Glonoinum	115
Glyceril, oxide-hydrate of	—
Glycerine	—
Gold	63
- foil	—
- foliated	—
- chloride of	64
- deutochloride of	—
- hydrochlorate of	—
- marcasite	203
- muriatic	64
perchloride of	—
- sulphuretted	—
Golden sulphur of antimony	189
Goose foot gray	85
- - stinking	62
- - seed	90
Grana clavi siliginis	178
- coccinellæ	93
- secalis degenerati	178
- Tiglii	98
- Tillii	—
Graphite	116
Graphites	116
Gratia Dei	117
Gratiola officin.	—
Gray oxide of manganese	138
Green iodide of mercury	144
Guaco	118
Guaiac, Guaiacum	—
Guaiacum officinale	—
Guinea pepper	80
Guako	118
Guaza	79
Gum Guaiac	118
Gummi Aloës	46
- Ammoniacum	47
- Asæfœtidæ	61
- Camphoræ	77
- Euphorbii	106
- Gambæ	119
- Gambogiæ	—
- Guaiaci	118
- Guttæ	119
- Gutti	—
- ligni sancti	118
Gummi-Resina Ammoniaci	47
- - Asæfœtidæ	61
- - Euphorbii	106
- - Guaiaci	118
Gutta Gamba	119
- Gambogia	—
Gutti	—
Gypsum	77
Hæmatoxylon campechianum	119
Hahnemann's caustic	83
- - tincture	196
Haired rush	126
Halogenium	88
Haremint	60
Hart's-horn, white burned	76
Hazel-wort	61
Hearts' ease	124
Hebradendron gambogiodes	119
Hedge hyssop	117
Helianthus annuus	119
Heliotrope	120
Heliotropium peruvianum	—
Hellebore black	—
- false black	43
- white	200
Helleborus niger	120
Helmetflower	42
Hemlock-dropwort	154
- little	44
- spotted	96
Hemp	78

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

Henbane, common wild or black 121
Hepar sulphuris calcareum 76
Heracleum Sphondylium 69
Herb bennet 114
- Christopher 43
- paris 158
- trinity 124
Herba Absinthii 35
- Acanthi german. 8
- - vulgaris 69
- Achilleæ albæ 146
- Aconiti lutei 43
- - Lycoctoni —
- - Napelli 42
- - salutiferi 158
- Amaraci 136
- Anagallidis Maris 50
- Anemon. pratens. 166
- Anthos 172
- - sylvestris 132
- Apii montani 157
- Arboris vitæ 195
- Arnicæ 58
- Athanasiæ 192
- Atriplicis fœtidæ 62
- - olidæ 62
- Belladonnæ 66
- Brancæ Ursinæ 69
- Calthæ sativæ 77
- - vulgaris —
- Cannabis indicæ 79
- Cardui Sancti 84
- Centauroidis 117
- Chamæcisti 94
- Chelidonii major. 85
- Chenopodii olidi 62
- Cicutæ aquaticæ 89
- - maculatæ 96
- - majoris 96
- - minoris 44
- - terrestris 96
- Cicutariæ 44
- Cisti Ledi 132
- Clematitis rectæ 92
- Cnici sylvestris 81
- Conii aquatici 89
- - maculati 96
- Consolidæ ind. 191
- Cortusæ 138
- Cotyledonis 97
- Cynocrambes 140
- Cynapii 44
- Cyriaci 138
- Digitalis minimæ 117
- - purpureæ 103
- Doronici germanici 58
- Euphrasiæ 106
- Flammulæ 168
- Flammulæ Jovis 92
- Fragariæ 113
- Fragulæ 113
- Gratiæ Dei 117
- Gratiolæ 117
- Helianthemi 91
- Hyoscyami nigri 121
- - peruviani 191
- Hyperici 124
- Intybi angusti 134
- Jaceæ 125
- Jusquiami 121
- Lactucæ fœtidæ 131
- - pratensis 192
- Libanotis 172
- Lobeliæ 135
- Majoranæ æstiv. 136
- Mari syriaci 138
- - veri —
- Mercurialis montanæ 140
- Millefolii 146
- Myriophylli 146
- Napelli cærulei 42
- Nicotianæ 191
- Oreoselini 157
- Paridis 158
- Pastinacæ vulgaris 69
- Perforatæ 124
- Petroselini mont. 157
- Phytolaccæ 160
- Polychrestæ 157
- Populaginis 77
- Pseudoacanthi 69
- Pulsatillæ min. 166
- - nigric. —
- Ranunculi palustris 169
- Rorellæ 104
- Roris marini hortensis 172
- - - sylv. 132
- - Solis 104
- Rutæ hortensis 173
- - latifoliæ —
- - sativæ —
- - vulgaris —
- Sabinæ 174
- Sampsuchi 136
- Savinæ 174
- Sedi minimi 179
- - acris —
- Sempervivi minor. —
- Solani furiosi 66
- - lethalis —
- - maniaci —
- - nigri 183
- - quadrifolii 158
- Solatri nigri 183
- Solis 121
- Sphondylii 69
- Spigeliæ anthelmiæ 184
- Tabaci 191
- Tanaceti 192
- Taraxaci —
- Theæ cæsareæ 194
- - chinens. —
- - imperialis —
- - viridis —
- Thujæ 195
- Trifolii amari 139
- - aquatici —
- - fibrini —
- - fragiferi 113
- Trinitatis 124
- Umbilici Veneris 97
- Urticæ minoris 198
- Uvae Ursi —
- Veelguttae 157
- Verbasci 201
- Verbenæ —
- - Maris —
- Vermicularis 179
- Verrucariæ 77
- Vincae minoris 202
- - pervincæ —
- Violæ tricoloris 124
- Virgæ regiæ 103
Hercules's all heal 69
High taper 201
Hoglice 147
Hog's bread 102
Holy-rose 94
Holly-thistle 81
Honey bee 54
Hops 134
Hop catkins —
- strobules —
Hordeum causticum 173
Horse radish 173
Huaco plant 118
Humulus Lupulus 134
Hydrargyrum 145
- aceticum 140
- ammoniato muriaticum 143
- biiodatum 141
- chloratum 142
- deuto-iodatum —
- muriaticum corros. —
- - mite 142
- - præcip. 143
- nitr. oxydulat. 142
- oxydatum rubrum 144
- oxydulatum nigrum 144
- periodatum 144
- subiodatum 144
- sulphuratum rubrum 91
Hydras ferricus 108

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

Hydrate of nitric acid 39
Hydrated carbonate of iron 108
- chloride of magnesia 136
Hydrochloras Ammoniæ 49
- baryticus 66
- chinicus 86
- morphicus 149
- Morphii —
Hydrochlorate of ammonia 49
- of gold 64
- of morphia 149
- of quinia 86
Hydrochloric acid, watery 38
Hydrocyanate of Zinc 204
Hydrocyanic acid 36
Hydrofluoric acid 37
Hydrogen Cyanide of 36
Hydroiodate of potash 127
- of potassium —
Hydronitric acid 39
Hyoscyamus niger 121
Hypericon —
Hypericum perforatum —
Hyperoxymuriate of potash 127
Hyperoxymuriatic acid 88
Hypocarbonic acid 39
Hyson skin 194
Ignatia amara 122
Ignatius' bean St. —
Illicium anisatum 52
Imperial tea 194
India berries 93
Indian anise 52
- caustic barley 173
- pink 184
- sweet pine kernel 125
- tobacco 133
Indigo 122
Indigofera —
Inky juice of the cuttle fish 181
Iodetum ferrosum 109
- Hydrargyry 141
- Hydrargyrosum 144
- kalicum 127
- Kalii —
Iodids of iron 109
- of lime 75
- of mercury 144
- of potassium 127
Iodina 123
Iodine —
Iodium —
Iodum —
Ioduretum Hydrargyri 144
Ioduretum Kalii 127
- Potassæ —
Ipecacuanha 123
Iron, acetate of, 107
- black (deut)oxide of, 110
- carbonate of, 108
- carburet of, 116
- hydrated protochloride of, 110
- hydrated carbonate of, 108
- iodide of, 109
- lactate of, —
- metallic 107
- muriate, red 110
- opening crocus of 108
- protocarbonate of —
- - chloride of 110
- pure 107
- quaterhydrated protochloride of 110
- sesquichloride, liquid —
- sulphate of 111
- wort 201
Isin-glass stone 77
Isis nobilis 97
Jacea 124
Jalap —
Jalappa —
Jambos myrtle 105
- tree, common —
Jatropha, Curcas 125
- large, —
John's wort. St. 60. 121
Juglans regia 125
Juncus effusus —
- pilosus 126
Juniperus Sabina 174
Jupiter 185
Kali bichromicum 126
- bromatum 128
- carbonicum 126
- chloricum 127
- hydroiodatum —
- hydriodicum —
- hydroiodinicum —
- hydrobromatum 128
- hydrobromicum —
- muriat. hyperoxyg. 127
- - oxygenat. —
- nitricum 127
- oxychlorinicum 127
- oxyhalogenatum —
- stibico-tartaricum 192
- subcarbonicum 126
Kalium bromatum 128
- iodatum 127
Kaolin 129
Kermesplant 160
Kermes minerale 129
Kernel-wort 177
— Keswick-lead 116
Klaprothium 71
Krameria triandra 170
Kreasote, Kreosote 129
Lachesis 130
Lactas ferrosus 109
- oxyduli ferri —
Lactuca virosa 131
Lactucarium —
Lady bird 92
Lady's thistle 82
Lamium album 131
Lana philosophica 204
Lapis magneticus 110
- specularis 77
Laser fœtidum 61
Laudanum 157
Laurel cherry 132
- herb 146
Laurocerasus 132
Laurus Camphora 77
- Cinnamomum 91
- Sassafras 175
Lead, acetate of 164
- black 116
- black ore 117
- carbonate of 165
- Keswick 116
- metallic 163
- pure —
- salt of 164
- sugar of —
- white 165
Leaf gold 63
- silver 55
Leather-charcoal 80
Ledum palustre 132
Leontodon Taraxacum 192
Leopard's bane 58
Lepidolite 133
Lettuce wild poisonous 131
Lice-bane 185
Lignum Amarædulcis 104
- Campechense 119
- Campechianum —
- Campescanum —
- cœruleum —
- Dulcamaræ 104
Lime acetate of 73
- arseniate of 74
- burned 75
- carbonate of 74
- caustic 75
- iodide of —
- phosphate of 76
- sulphate of 77
- sulphuretted 76
- unslacked 75
Lime blossoms 195

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

Linden tree 195
Lion's tooth 192
Liquor Ammonii caustici 48
- Barytæ aceticæ 65
- Chlori 88
- Ferri muriatici 110
- - sesquichlorati —
- subbichloreti ferri —
Lithanthrakokali simplex 53
- sulphuratum —
Lithion carbonate of 132
- oxide of —
- carbonicum —
Lithium —
Liver of sulphur prepared from lime 76
- of sulphur prepared from soda 151
Loadstone natural 110
Lobelia inflata 133
- bladder inflated —
Log-wood 119
Lolium temulentum 133
Long birth-wort 57
Love-apple 182
Louse-wort 185
Luna of alchymists 55
Lupulus 134
Lust-wort 104
Lycoperdon bovista 69
Lycopodium annotin. 134
- clavatum —
- complanatum —
Lytta vesicatoria 79
Magisterium Bismuthi 67
- Marcasitæ —
- Plumbi 165
Magistery of Bismuth 68
Magnesia carbonate of 135
- chloride of 136
- hydrated chloride of —
- muriate of —
- subcarbonate of 135
- sulphate of 136
- white 135
Magnesia aërata —
- alba —
- anglica —
- carbonica —
- edinburgensis —
- Muriæ —
- muriatica 136
- Nitri 135
- Salis amari —
- sulphurica 136
- vitriariorum 138
- vitriolata 136
Magnesium aceticum 137
- carbonicum —
Majorana 136
Mala aurea 152
- lycopersica 182
Malacca bean 50
Manganese, acetate of 137
- carbonate of 137
- oxide of 138
- peroxide of —
Manganesium oxyd.nativ. —
Manganum aceticum 137
- carbonicum —
- hyperoxydat. 138
Marcasita alba 67
Marine acid 38
Majoram, sweet 136
Mars 107
Marsh butter cup 168
- crowfoot 169
- tea 132
- trefoil 139
- violet single 102
Marshy parsley 154
Marum verum 138
Marygold garden 77
Mary's thistle St. 82
Matricaria Chamomilla 84
Meadow anemone 166
- crow foot 167
- saffron 94
Meconium 157
Melinum 74
Meloë proscarabæus 139
Meloës vesicatorii 79
Menispermum Coccul. 93
- palmatum 95
Menyanthes trifoliata 139
Mercurialis perennis 140
Mercurious oxide 144
Mercurius acetatus 140
- acetosus —
- biodatus 141
- corrosiv. 141
- cosmeticus 143
- dulcis 142
- iodat flav. 144
- - ruber 141
- nitrosus 142
- phosphoratus 143
- phosphoricus —
- præcipit. alb. —
- - ruber 144
- protoiodatus —
- solubilis Hahnem. —
- sublim. corrosiv. 141
- vivus 143
Mercury 145
- acetate of —
- ammon.-chloride of 143
Mercury ammonio-nitrate of suboxide or dioxide of 144
- bichloride of 141
- binoxide of 144
- biiodide of 144
- black 144
- chloride of 142
- corrosive sublimate of 141
- dulcified 142
- green iodide of 144
- metallic 155
- oxymuriate of 141
- phosphate of 143
- perchloride of 141
- protiodide 144
- pertochloride of 142
- proonitrate of —
- pertoxide of 144
- red oxide —
- - precipitate of —
- sublimate of 141
- subiodide of 144
- sweet sublimate 142
- white precipitate of 143
Mezereon 146
Mezereum —
Micania Guaco 148
Milfoil 146
Milk thistle 82
Millefolium 146
Millepedes 147
Mineral tar 58
Mocha Coffee 94
Molybdena 147
- sulphuret of —
Molybdenite —
Molybdic acid 38
Momordica Elaterium 105
Monk'shood 42
- yellow 43
Moor-grass 104
Morphia, acetate of, 148
- hydrochlorate of 149
- muriate of —
- pure 147
- sulphate of 149
Morphium 147
- aceticum 148
- hydrochlorat. 149
- muriatic. —
- purum 147
- sulphuricum 149
Moschus —
- ex vesicis 150
- moschiferus 149
- orientalis —
- tibetanus —
- tunquinensis 149

Digitized by UNIVERSITY OF MICHIGAN Original from UNIVERSITY OF MICHIGAN

	Page
Mountain arnica	58
- betony	—
- parsley, small	157
- tobacco	58
Mugwort	60
Mullein	201
Murex purpurea	150
Murias Ammoniæ	49
- Auri	64
- chinicus	86
- Magnesiæ	136
- Morphii	149
- oxyd. hydr. ammon.	143
Muriate of Ammonia	49
- of baryta	66
- of magnesia	136
- of morphia	149
- of platinum	163
- of Quinia	86
- of Quinine	—
- of Quina	—
- of Soda	151
Muriatic acid	38
- gold	64
Murides	69
Murina	—
Muscæ hispanicæ	79
Muscovy glass	77
Musk	149
Myristica moschata	153
Naphta Petræ	158
- Petrolei	—
Nardostachys Jatamansi	190
Natrium chloratum	151
- sulphuratum	—
Natrum boracicum	68
- carbonicum	150
- chloratum	151
- hydrochloricum	—
- muriaticum	—
- nitricum	—
- subcarbonicum	150
- sulphuratum	151
- sulphuricum	152
Natural Loadstone	110
Navelwort, Venus'-	97
Nectandra Puchury	161
Nenuphar	154
- luteum	—
Nerium Oleander	155
Nettle, common	198
Neutral phosphoric Ammonia	50
Niccolum carbonicum	152
Nickel carbonate of	—
Nicotiana tabacum	191
Night-shade common	183
- - deadly	66
- - woody	104
Nihilum album	204
Nitras Ammoniæ c. oxyd. Hydrar.	144
- argenticus	56
- Bismuthi	68
- hydrargyrosus	142
- kalicus	128
- natricus	151
- potassæ	128
- Soda	151
Nitroglycerine	115
Nitrate of potash	128
- of silver	56
- of soda	151
- of water	39
Nitre	128
- cubic	151
- fixed	126
- purified	128
Nitric acid	39
- - hydr. or sesquihydr. of	—
- - solutive water of Geber	—
Nitrum	128
- Argenti	56
- cubicum	151
- fixum	126
- rhomboidale	151
Nuces aromaticæ	153
- catharticæ	98
- nucistæ	153
- Sassafras	161
Nuclei Myristicæ	153
Nuphar luteum	154
Nutmeg	153
- bean	161
Nux cathartica americana	98
- moschata	153
- vomica	—
Nymphæa lutea	154
Ocimastrum	177
Ocotea puchury	161
Oenanthe crocata	154
Oil beetle	139
- clock	—
- Dippel's animal, rectif.	155
- ethereal essential	—
- of horns rectif.	—
- of turpentine	156
- of Vitriol	41
Oleander	155
Oleum animale	—
- - æthereum	—
- - Dippelii	—
- - fœtidum	—
- Cornu cervi fœtid.	—
- Cornu cervi rectif.	155
Oleum Martis	110
- Petræ	158
- Terebinthinæ	156
- Terræ	158
- Vitrioli	41
One-berry	158
Oniscus Asellus	147
Ononis spinosa	156
Opium	157
- crudum	—
- thebaicum	—
Orach gray	85
- stinking	62
Oreoselinum	157
Origanum Majorana	136
Orpiment	63
Oxalic acid	39
Oxide of bismuth	68
- of calcium	75
- of lithion	132
- of manganese gray	138
- of mercury red	144
- of nickel	152
- of zinc	204
Oxidulum hydrarg. salinum	144
Oxydum aluminicum	56
- calcicum	75
- ferricum c. aqua	108
- hydrargyricum	144
- Hydrarg. c. Chloret. Ammon.	143
- Stibii hydr. sulph.	189
- Zinci	204
Oxymuriate of mercury	141
- of potash	127
Oxymuriatic acid	88
Oxysulphuret of Antimony	189
Oyster-shells	74
Pæonia officinalis	158
Panacea lapsorum	58
Panax quinquefolium	114
Pansy	124
Papaver somniferum	157
Papeeta	122
Paris quadrifolia	158
Park, leaves	121
Parsley, common or garden	159
- marshy	154
- small wild	157
- - mountain	—
- stone	—
Peony	158
Periwinkle	202
Perchloride of gold	64
Peroxide of manganese	138
Peroxidum hydrargyri	144
Peruvian bark false	82

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

	Page
Peruvian bark gray	82
- - yellow	86
- balsam white	97
Petalite	133
Petasides, great	197
Petroleum	158
Petroselinum	159
Petty-whin	156
Pharmacolite	74
Phellandrium aquaticum	159
Phosphas Ammoniæ	50
- chinicus	87
- hydrargyrosus	143
Phosphate of Ammonia	50
- of lime	76
- of mercury	143
- of quinia	87
Phosphoric acid	40
- Ammonia	50
Phosphorus	160
Phytolacca decandra	—
Pichurim bean	161
Pigeon's herb	204
Pimpernel common	50
- red	50
Pimpinella saxifraga	161
Pine-buds	162
- shoots	—
Pink root	184
Pinus sylvestris	162
Piper caudatum	99
- Cubeba	—
- hispanicum	80
- indicum	—
- turcicum	—
Pipperidge bush	67
Pismire	112
Platina	162
- del Pinto	—
- muriatica	163
Platinum	162
- muriate of	167
Plumbago	116
Plumbum	163
- aceticum	164
- carbonicum	165
Podophyllum peltat.	165
Pollen Lycopodii	134
Polygala Senega	180
Polypodium Filix mas	112
Poison ash creeping	171
- ivy creeping	171
- nut	153
- oak creeping	171
- wood creeping	—
Poisonous arum	73
Poma amoris	182
- Colocynthidis	95
Pomegranate, bark of the root of the	116
Pompholyx	204
Pond crawfish	78
Poor man's weather-glass	50
Porcelain clay	129
Potash	126
- bichromate of	—
- bromate of	128
- carbonate of	126
- chlorate of	127
- hydriodate of	—
- hyperoxymuriate of	—
- nitrate of	128
- oxymuriate of	127
- red chromate of	126
- subcarbonate of	—
Potassio-tartrate of Antimony	192
Potassium, bromide of	128
- iodide of	127
Precipitate of mercury red	144
- - white	143
Prick madam	179
- wood	106
Priest'scap	—
Proscarab	139
Protiodide of mercury	144
Protonitrate of	142
Protoxide of	144
Protosulphate of iron	111
Prunus Laurocerasus	132
- padus	166
- spinosa	—
Prussic acid	36
Puck-ball	68
- fist	—
- foist	—
Puff ball	—
Puffin	—
Pulsatilla	166
Pulverulent sulphur	188
Pulvis Carthusianorum	129
- Lycopodii	134
Punica Granatum	116
Purging Croton	98
- salt	136
Purple fox-glove	103
Purpura	150
Quina	86
- hydrochlorate of	—
- muriate of	—
- Calisaya	—
Quinia hydrochlorate of	—
- muriate of	—
- phosphate of	87
Quinine hydrochlorate of	86
- muriate of	87
Quinine phosphate of	—
Quicksilver metallic	145
Radish, black garden	169
- sommer	—
- winter	—
Radix Acanthi vulg.	69
- Aconiti	43
- - falsi	65
- Allii	46
- Alopecuroidis	156
- Amaradulcis	104
- Angelicæ sativae	51
- Ari vulgaris	60
- Aristolochiæ Clematitis	57
- - creticæ	—
- - longæ	—
- - vulgar.	—
- Arnicæ	58
- Aronis communis	60
- Artemisiæ	60
- Arthanitæ	102
- Asari	61
- Asparagi altici	62
- Azari	61
- Brancæ ursinæ	69
- brasiliensis	123
- Bryoniæ albæ	71
- Cahincæ	73
- Cainanæ	—
- Caincæ	—
- Caryophyllatæ	114
- Chelapæ	124
- Chelidonii maj.	85
- Christophorianæ	43
- Cicutæ aquaticæ	89
- Colchici	94
- Colubrina	181
- Columbo	95
- Conii aquatici	89
- Consolidæ majoris	191
- Contrayervæ virgin.	184
- Cyclaminis	102
- Dentis Leonis	192
- Dictamni albi	102
- Diptamni albi	—
- Doronici germanici	58
- Dulcamaræ	104
- Dysentericæ	123
- Ellebori albi	200
- - nigri	120
- Filicis maris	112
- Fraxinellæ	102
- Fraxini pumili	—
- Gelapii	124
- Gei urbani	114
- Gentianæ cruciatæ	113
- - - luteæ	—
- - - majoris	—
- - - minoris	—
- - - - rubræ	—

Digitized by UNIVERSITY OF MICHIGAN Original from UNIVERSITY OF MICHIGAN

	Page
Radix Gialappæ	124
- Gingiberis albi	206
- - commun.	—
- - nigri	—
- Ginseng	114
- Ginsing	—
- Ginzing	—
- Hellebori albi	200
- - nigri falsi	43
- - nigri	120
- Heraclei	69
- Hippecacuanhæ	123
- Jalappæ	124
- Jalopii	—
- Lactucæ pratensis	192
- Leontodontis	—
- Mechoacannæ nigræ	124
- Melampodii	120
- Nardi rusticani	61
- Ninsi	115
- Nymphææ luteæ	154
- Ornithogali	176
- Pæoniæ	158
- Pœoniæ	—
- Pancratii veri	176
- Panis porcinæ	102
- Parthenii	60
- Pastinacæ vulgaris	69
- Petasitidis	197
- Pimpinellæ albæ	161
- - hircinæ	161
- - nostratis	—
- - umbell.	161
- Polygalæ virg.	180
- Pseudo acanthi	69
- Raphani hortensis	169
- - nigri	—
- - rusticani	57
- - sylvestris	—
- Ratanhæ	170
- Ratanhiæ	—
- Remoræ aratri	156
- Restæ Bovis	—
- Rhabarb. oriental.	170
- Rhabarbari veri	—
- Rhei moscovitici	—
- - russici	—
- Salsaparillæ	175
- Sanamundæ	114
- Sanguinariæ	175
- Sarsæ	175
- Sarsaparillæ	—
- Sassaparillæ	—
- Saxifragæ	161
- Scillæ	176
- Scrophulariæ fœtidæ	177
- Scrophulariæ major.	177
Radix Scrophulariæ vulgar.	177
- Senecæ	180
- Senegæ	180
- Serpentariæ bras.	73
- - virgin.	181
- Sphondylii	69
- Squillæ rubræ	176
- Symphyti	191
- Taraxaci	192
- Tragoselini	161
- Urinariæ	156
- Uvæ anginæ	71
- Valerianæ minor.	199
- - sylvestr.	—
- Veratri albi	200
- - nigri	120
- Viperina	181
- Vitis albæ	74
- Zingiberis	206
- albi	—
- nigri	—
Ranunculus acris	167
- bulbosus	168
- Flammula	—
- sceleratus	169
Raphanus sativus	—
Ratanhia	170
Ratany	—
Rattle-snake root	180
Rectified animal oil, Dippel's	155
Red ant	112
- coral	97
- oxide of mercury	144
- pimpernel	50
- wort	198
Resina Euphorbii	106
- Guajaci nativa	118
Rest-harrow	156
Rheum palmatum	170
Rhododendron chrysanthum	171
- ferrugineum	—
- hirsutum	—
- maximum	—
Rhubarb	170
Rhus radicans	171
Rhus Toxicodendron	—
- Vernix	172
River crawfish	78
- sponge	65
Rock oil	158
Roman-vitriol	101
Romanic gum	47
Rose-bay	155
- -laurel	—
- mary	172
- - wild	132
Rosmarinus officinalis	172
Rue common	173
- garden broadleaved	—
Rush fluttering	125
- grove, spring	126
- haired	—
- spring grove	—
Ruta graveolens	173
Sabina	174
Sabine, common	—
Saccharine acid	39
Saccharum saturni	164
Saffron crocus	98
- meadow	94
Sal ammoniac	49
- cathart. of Glauber	152
- common	151
- culinary	—
- Epsom	136
- purging	—
- of tartar	126
Sal acidum Benzoës	35
- alkali volatile	48
- amarum	136
- ammoniacum	49
- - volatile	48
- anglicum	136
- armoniacus	49
- Cancrorum	73
- Cretæ	—
- culinare	151
- Epshamense	136
- essentiale Tartari	41
- Gemmæ	151
- marinum	—
- Martis	110
- - liquidum	111
- mirabile Glauberi	152
- petræ	128
- saidschützense	136
- seidlitzense	—
- Sodæ	150
- Tartari	126
Salentine	85
Salt of steel	111
Saltpetre from Chile	151
- prismatic	128
Sambucus nigra	174
Sanguinaria canadensis	175
Sarsaparilla	—
Sassafras bark	—
- bean	161
- nut	—
- officinalis	175
Sassaparille from Honduras	176
- - Lisbon	—
- - Vera Cruz	—
Saturnus	163
Savine common	174
Scheele's Green	101

Digitized by UNIVERSITY OF MICHIGAN
Original from UNIVERSITY OF MICHIGAN

	Page
Scilla maritima	176
Sclerotium Clavus	178
Scrophularia aquatica	177
- nodosa	—
Scrophulary	—
Sea-flower	154
- onion	176
- salt, spirit of	38
- sun-flower	94
Secale clavatum	178
- corniculatum	—
- cornutum	—
- luxurians	—
- maternum	—
- temulentum	—
Secalis mater	—
Sedum acre	179
- reflexum	—
- sexangulare	—
Selenite	77
Selenites	—
Selenium	179
Semecarpus Anacardium	50
Semen Anarcard. orient.	—
- Anisi canadensis	52
- - chinensis	—
- - indici	—
- - stellati	—
- Apii hortensis	159
- Badiani	52
- Cardui maculat.	82
- - Mariæ	—
- Cataputiæ min.	98
- Cebadillæ	173
- Cinæ levantic	90
- Cocculi indici	93
- - levantici	—
- Colchici	94
- Contra	90
- Cubebarum	99
- Daturæ	186
- Evonymi	106
- Fœniculi aquatici	159
- - caballini	—
- Lactei	82
- Lycopodii	134
- Musci clavati	—
- - terrestris	—
- Pedicularis	185
- Petroselini	159
- Phellandrii	159
- Ricini majoris	125
- Sabadigliæ	173
- Sabadillæ	—
- Santonici	90
- Solani fœtidi	186
- - maniaci	—
- Spinæ albæ	82
- Staphidis agriæ	185
- Staphisagriæ	—
Semen Stramonii	186
- Xantonici	90
- Zedoariæ	—
Senega	180
Sengreen	179
Senna	180
Sepia officinalis	181
Serpentaria	—
Serpentary	—
Sesquicarbonate of ammonia	48
- sulphuret of antimony	129
- - of arsenic	63
- sulphuretum stibii præcipitat	54
Shepherd's weatherglass	50
Sibirian Rhododendron	171
Silica	182
Silicea	—
Silicic acid	—
Silicious earth	—
Silver	55
- dust of	—
- nitrate of crystall.	56
Simpler's joy	204
Sium Sisarum	145
Slaters	147
Sloe bush	166
Smilacine	176
Smilax medica	175
- officinalis	—
- syphilitica	—
Sneeze-wort	200
Snowberry	73
Soda carbonate of	150
- crystallisata	—
- biborate of	68
- chloride of	151
- gold, muriatic	64
- muriate of	151
- natronated muriate of Gold and	64
- nitrate of	151
- salt	150
- sulphate of	152
- sulphuret of	151
- sulphuretted	—
- vitriolated of Glauber	152
Solanum Dulcamara	104
- Lycopersicum	182
- mammosum	183
- nigrum	—
Solution of ammonia	48
Sow	147
- bread	102
Spanish flies	79
- white	68
Sparry acid	37
Specular stone	77
Spelter	203
Spider Garden	55
Spigelia anthelmia	184
Spindle tree	106
Spirit of nitre, Glauber's	39
- of sal ammoniac with quicklime	48
- of salt Glauber's	38
- of sea salt	—
- of turpentine	156
Spiritus Calcariæ causticæ	75
- Nitri acidus	39
- Salis acidus	38
- ammoniac. caustic.	48
- sulphuratus	188
- Terebinth gallic.	156
Spodumene	133
Sponge burnt	184
Spongia palustris	68
- tosta	184
- usta	—
Spongilla lacustris	65
Spring grove rush	126
Spurge olive	146
Spurred rye	178
Spurious Angustura bark	70
Squill	176
Squirting cucumber	105
Stannum	185
- indicum	185, 203
Staphisagria	185
Staves-acre	—
Steel salt of	111
Stellated anise	52
Stercus Diaboli	61
Stibium bisulphurat. præcipit.	189
- sulphurat. aurantiac.	—
- - nigrum	54
Stigmata Croci	98
Stipites Amaræ dulcis	104
- Dulcamaræ	—
Stone-crop	179
- break	161
- parsley	157
Stramonium	186
Straw berry wood	113
- - tree	198
Strobuli Humuli	134
- Pini	162
Strontia carbonica	186
Strontian carbonate of	—
- earth	—
Strychnia	187
- nitrate of	—
- sulphate of	188

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Strychninum 187
Strychnium —
Strychnium nitricum —
- sulphuricum 188
Strychnos nux vomica 70, 153
Subcarbonas natricus 150
- potassæ 126
Subcarbonate of Magnesia 135
- of Soda 150
Subiodite of Mercury 144
Sublimate, corrosive of Mercury 141
- sweet of Mercury 142
Sublimed sulphur 188
Subnitras Bismuthi 68
Subphosphas calcicus 76
Succinum griseum 47
Succus Alœs 46
- Sepiæ 181
Sugar acid of 39
- of lead 164
- of milk 30
Sulphas Calcariæ 77
- calcicus —
- Chinii 87
- cinchonicus 90
- cupricus 101
- ferrosus cum Aqua 111
natricus 152
- Magnesiæ 136
- magnesicus —
- Oxyduli ferri 111
Sulfas Quinii 87
- Sodæ 152
- Zinci c. Aqua 205
Sulphas alumin. & Potass. acid. 46
- aluminico-kalinus c. aqua —
- morphii 149
- morphicus —
Sulphate of cinchonia 90
- of copper 101
- of iron 111
- of lime 77
- of magnesia 136
- of morphia 149
- of Quina 87
- of Quinia —
- of Quinine —
- of Soda 152
- of Strychnia 188
- of zink 205
Sulphitum arsenicos. 63
- carbonat. 45
- carbonicum 45
Sulphur flowers of 188
pulverulent —
- sublimed —
Sulphur carbonatum 45
- depuratum 188
- Lycopodii 134
Sulphur Antimonii auratum 189
- stibiatum aurant. —
- rubeum 129
- rubrum —
- sublimatum 188
- vegetabile 134
Sulphuret of Antimony 54
- of Carbon 45
- of Molybdena 147
Sulphuretted gold 64
- lime 76
Sulphuretum Auri 64
- Calcii 76
- calcicum —
- Carbonei 45
- Hydrargyri 91
- Stibii 54
- - aurantiacum 189
- - rubrum 129
Sulphuric Acid 44
Sumach tree 172
Sumbul 190
Sumbulus moschatus —
Summitates Absinthii. 35
- Hyperici 121
- Mari veri 138
- Millefolii 166
- Taxi 193
Sunchafer 92
Sundew 104
Sunflower 119
Superchlorid. formylicum 87
Superoxyd. manganic. 138
Sweet marjoram 136
Sweet-scented violet 202
Sweet sublimate of mercury 142
Symphytum officinale 191
Syrian herb mastich 138
Tabacum 191
Talcum sulphuricum 136
Tanacetum vulgare 192
Tansy —
Tar Barbadoës 158
Taraxacum 192
Tartar salt of 126
Tartaric acid 41
Tartarous acid —
Tartarus antimoniatus 192
- Antimonii —
- emeticus —
- stibiatus —
Tartras kalico-stibicus —
- Oxyduli Stibii & Potassæ —
Taxus baccata 193
Tea 194
Tellurium 193
Terra alumina 56
- aluminosa —
- calcariæ phosph. 76
- muriatica 135
- Ossium 76
- ponderosa acetica 65
- - aërata —
- - salita 66
- silicea 182
- strontiana 186
Teucrium Marum 138
Thea chinensis 194
- viridis —
Thée, imperiale —
Thorn-apple 186
Thorned rye 178
Three-coloured violet 124
Thuja occidentalis 195
Tilia europæa —
Tiler's lice 147
Tin 185
Tincal 68
Tincar —
Tincture acris sine Kali 83, 196
- Antimonii acris —
- Ferri acetici 108
- - muriatici 111
- Geffii 60
- kalina 196
- sulphuris 188
Toadstool 44
Tobacco 191
- mountain 58
Tomato 182
Tonco 196
- camphor —
Tonquin-bean —
Torch-weed 201
Trigonocephalus Lachesis 130
Trisnitrate of Bismuth 68
True love 158
Turiones pini 162
Turnsol 120
Tussilago Petasites 197
Ulmus campestris 197
- effusa —
Unslacked lime 75
Upright virgin's bower 92
Urtica dioica 198
- urens —
Uva Ursi —
Valerian 199
Valeriana officinalis —
Varnish Sumach tree 172
Vegetable alkali 126
- charcoal 81
- sulphur 134

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	Page
Venitian borax	68
Venus	99
Venus' navelwort	97
Veratria	199
Veratrina	—
Veratrinum	—
Veratrum	200
- album	—
- officinale	—
- Sabadilla	199
Verbascum thapsiforme	204
- Thapsus	—
Verbena officinalis	—
Verdigris crystals of	100
Vermilion	91
Vervain	204
Vervin	—
Vinca minor	202
Vinous acid	44
Viola odorata	202
- tricolor	124
Violet sweetscented	202
- three-coloured	124
Virginian snake-root	184
Virgin's bower, upright	92
Virus of the rattle-snake	130
Vitex agnus castus	45
Vitriol blue	104
- green	111
- of copper	101
- of iron	111
- oil of	44
- Roman	104
- white	205
Vitriolic acid	44
Vitriolum album	205
Vitriolum cæruleum	104
- Cupri	—
- de Cypro	—
- Martis	111
- Veneris	104
- viride	111
- Zinci	205
Wad	116
Wake robin	60
Wallnut	125
Wall-pepper	179
Water cicuta	89
- hemlock	—
- - fine-leaved	159
- hyssop	117
- lily yellow	154
- chlorinated	88
- nitrated	39
White arsenic	59
- magnesia	135
- oxide of arsenic	59
- precipitate of mercury	143
White vine	71
- vitriol	205
Wild bryony	71
- hops	—
- nep	—
- Spikenard	61
- vine	74
Wincopipe	50
Wind flower	166
Wine, Acid of	41
Witch-meal	134
Wolf's-bane, large blue	42
Wolf's-bane, yellow	43
- claw pollen-dust	134
- peach	182
Wood-ant	112
Wood charcoal	81
Wood lice	147
Wood sorrel, acid of	39
Woody night-shade	104
Wool-blade	201
Worm-seed of Judæa	90
- -wood, common	35
Yarrow	146
Yellow-arsenic	63
- flowered Rhododendron	171
Yew	193
Youth-wort	104
Zinc	203
- acetate of	204
- Cyanide of	204
- Flowers of	205
- hydrocyanate of	204
- oxide of	205
- sulphate of	—
Zinc-white	204
Zincum	203
- aceticum	204
- album	—
- cyanatum	—
- hydrocyanic.	—
- orientale	203
- oxydatum	204
- sulphuricum	205
Zingiber	206
Zizany	133

ERRATA.

Page 95, l. 12	for	Pomæ read Poma.
- 128, l. 8	-	HYDROBRIOMCUM read HYDROBROMICUM.
- 173, l. 11	-	latiofolia read latifolia.
- 176, l. 3 from below	-	Squilla read Scilla.

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HOMŒOPATHIC

PHARMACOPŒIA,

COMPILED

BY ORDER OF THE GERMAN CENTRAL UNION OF HOMŒOPATHIC PHYSICIANS

AND EDITED

FOR THE USE OF PHARMACEUTISTS

BY

CARL ERNST GRUNER,
APOTHECARY IN DRESDEN.

AUTHORISED ENGLISH EDITION,

TRANSLATED FROM THE SECOND GERMAN EDITION.

LEIPSIC:
C H. A R N O L D.
1855.

LONDON:
WILLIAMS & NORGATE.

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