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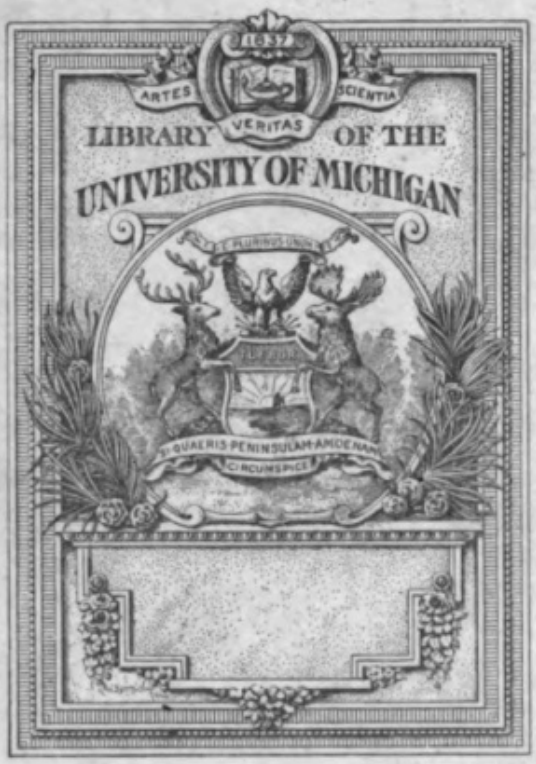

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'Quantam ego quidem video motus morbosi fere omnes a motibus in systemate nervorum ita pendent ut morbi fere omnes quodammodo Nervosi dici queant."—CULLEN'S NOSOLOGY: BOOK II. P. 181—EDINBURG, ED. 1780.

THE

Alienist and Neurologist

A JOURNAL OF

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Intended Especially to Subserve the Wants of the General Practitioner of Medicine.

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THE
ALIENIST AND NEUROLOGIST.

VOL. XXIV. ST. LOUIS, FEBRUARY, 1903. No. 1.

SOME IDEALS OF THE MEDICAL TEACHER*

By JAMES H. McBRIDE, M. D.,

LOS ANGELES,

Member American Academy of Medicine.

THOUGH we are here primarily to do honor to one whom we all love, we are also here as college men to further if possible college interests, and I shall while away my fraction of the hour with remarks on the duties and ideals of the medical teacher.

It is, of course, necessary that in much of what I say I should point a local moral, but I wish also to consider you as men working in a common cause with medical teachers everywhere, as members of a great fraternity unhindered by distance, nationality or language.

My thanks are first due to you for the position which you have given me. Its usefulness will depend upon my ability to apply its opportunities in practical ways for the good of the college. In administering a trust the man is essentially the position, and so far as results are concerned every position is just the size of the man who occupies it.

*Remarks at a banquet given to Dr. H. G. Brainerd, the retiring Dean of the Medical Department of the University of Southern California, September 15, 1902. Reprinted from *Southern California Practitioner* for October, 1902.

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A great place may be made small if a small man attempts to fill it and the position of a dean of a medical college shrinks to the size of a small personality or expands to the measure of a big one; and if it confers honor upon a man it is largely because he, having high ideals, lifts the position to their level.

It hardly seems necessary to remind you that medical education in the United States is far superior to what it was twenty or even ten years ago. Since the organization of the association colleges have approximated in their methods, medical education has been elevated and unified and graduates have been better prepared for practice. In fact higher educational standards will always achieve just this result, for not only will men be better instructed but a better class of men will be attracted. Any college that cares for quality rather than quantity, that cares to send out men who know, and know thoroughly and know in practical ways, the very best that medical science has to give, is a college that will in the long run attract the best men, and through these it will get reputation that will draw numbers as well as character.

With the exception of the position of parent there is no calling in life more serious than that of teacher, none that has in its results more of human destiny. It is a serious thing even to be a grown up, for to be this is to daily influence by example and in other ways the lives of the young. Still more serious is it to be a teacher, for the teacher is an exempler, he does more than impart knowledge, he trains the faculties and disciplines men in laws, in principles, in methods; he creates enthusiasm, he inspires to achievement, he is a maker of character. The great teachers all through the centuries from Plato to Comenius and Mark Hopkins have been primarily character builders; they have brought out the best in others, have helped the weak to be strong, and taught the strong how to add to their strength: they have inspired others to work, and have made actual and effective the potential qualities of character.

I assume that every member of this faculty is a

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teacher in the best sense, and that every one is a worker, that each one is devoted to the best interests of the college and is determined to give it the very best service he is capable of. I assume that there is no room in Southern California for a second-class medical college, that there is no room in this college for second-class professors, and, if I may be allowed the use of a Hibernianism, that there is still less room for second-class students. The day of the Col. Sellers and the Doc Goodfellows in the medical profession is passed. The doctor of the future may be a genial man, but primarily he will be a cultured gentleman and a scientific man in the broadest sense, and the time is not far distant when he will be a college graduate before having a medical degree.

The efficiency of a college shows in the character of its graduates, not alone in their medical training, but also in their character as men and citizens. We want to bid for first-class men, men of talent and zeal, men of clean lives and the finest character, and who care to be something besides mere pill peddlers. As each human life is just about what each one aspires to, so every institution becomes what those who shape its affairs strive to make it. Carelessness and laxness in standards, indifferent teachings and commercial ideals will make any medical college common and cheap, an institution the better class of men will avoid. A college that has high standards and does first-class work, that yields to no temptations of commercialism, nor cheapens its work to draw a crowd, will have the only kind of success that wears the name of decency.

To those of you who helped to found this college seventeen years ago the institution does not seem young. It has a good building and one of the best equipped pathalogical laboratories in the United States. This is no small achievement, for it has meant much self-denial and laborious and unrewarded years to some of you, except the reward of having done a good work. Yet this college is still young, the country itself is young, Southern California is still in its youth; we are in the midst of the tedious and trying process of organizing those social forces that are to

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be the foundation of the future. The builders of States are not the great people, they are the humble, honest, unselfish, faithful people who possess in a high degree the elementary and simple qualities of character, industry, frugality and the like, qualities that are worth more and have been worth more to the race than all art and all science and all learning. And it is primarily these qualities that build institutions like this.

It behooves us as medical men to stand with the best, to require as I believe you do, that the members of our faculty rank with those of other faculties, and that our students be men who, when they graduate are equal in acquirements to students in any college. Every member of this faculty should be, and I believe, is the best equipped man that can be got for his special work, a man who can stand up in any company of his peers and discuss medical subjects to the credit of himself and the college.

To be this and to do this means that every one of us should be a student, that we should be teachable, that we should be growing men. The growing men are the progressive men who have high standards; they are the men who *care*, the men who do things, the men who are always young, and who every year pitch their tents upon higher levels of life. It is not an easy thing to be a growing man; in fact, it is a very difficult thing; it is about the hardest chore a man can set himself, and it appeals to the highest qualities of manhood. To be a growing man is to be a student three hundred and sixty-five days in the year; it is to be always looking forward; it is to be an industrious man, a persistent man, a man devoted year after year to doing the best things in special lines of work, and all this is a severe and daily test of character.

Every physician who practices medicine in Southern California will doubtless agree with the statement that in the higher sense professional life here is isolated. We are far from the great medical centers and we lack in some degree the inspiration and incentive that comes of contact with those who are connected with great institutions, either hospitals or colleges, or who have the advantage of

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the constant drill that is unconsciously got in large cities.

The world has always grown and still grows by co-operation. Men are what they are by reason of the contacts of daily life, the attrition of man with man, the mutual helpfulness that comes of the common interests and even of the contests of life, that furnish discipline and sharpen faculty, that stimulate research and make men every day anxious to learn and eager for the fray.

Great cities have this, great institutions are made by it and exemplify it in their ever-growing and complex routine, and men who live under such influences have their lives renewed and inspired by them.

In Southern California we are denied much of this, and it is necessary that we supply this deficiency with diligent work among ourselves, and by seeing as much as possible of the work of the best men in eastern cities.

If every member of this faculty would spend two months every two or three years working in eastern hospitals, the professional equipment of the members would be improved and the reputation of the college as being composed of progressive working men would be of benefit to the institution. We all need this contact with eastern men. We would come home not only with additional knowledge, but what is vastly of more benefit, we would return with renewed enthusiasm.

As a part of this same plan to link us to the best of the profession at large, it would, I think, be well for the faculty to secure the services of some one of medical fame and high character in the East to deliver a course of lectures to the students and the profession of Southern California every year. If men, prominent in the profession in the east, could be induced to come here for this purpose it would be educative to the entire profession of Southern California and advantageous to this institution.

The profession of the country is watching with a critical eye the conduct and the product of every medical college. The period for competition for numbers is passed, and the time has come when the competition is in the value of instruction given. Medical colleges are giving yearly better

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and better instruction and we cannot afford to be less progressive than the best, and every relation that we can establish with the best institutions and with progressive medical men will be helpful to us.

With our bacteriologic laboratory and physiologic apparatus we ought to begin to do research work. Research work is excellent discipline for the younger men and is also good occupation for the older practitioner. A man should never be too old to engage in it. Dr. Sidney Ringer and Dr. Lauder Brunton still do research work. Weir Mitchell not only does it himself, but is constantly inspiring young men to carry it on. There is nothing that does so much to give a medical man an interest in scientific medicine, or to develop intellectual momentum as original research. There is nothing that helps more to make comprehensible and attractive some of the hard problems presented in the sick room than original research along certain lines.

In work on animals the student sees the machinery of life while it runs, and gets an insight into the physiologic processes that he would not otherwise have. He will have a clearer mental picture of the vital mechanism, a more accurate insight into all those complex and orderly processes with which he must daily deal as a physician.

Every medical faculty should as individuals and as a faculty be devoted to the literature of the profession. We ought to be known as men who care for the best medical literature in the world. In these days of careful work and critical reviewing one can hardly write a creditable paper without knowing the recent literature of the world on the subject. He can only know this by having the recent journals and works to consult. Let us have a library. Let us not have it said that Los Angeles physicians are indifferent or so busy making money that they forget Bacon's maxim that "Every man is a debtor to his profession." A beginning has already been made and it is hoped that we may after a time and with your assistance have a good medical library at the college building.

More attention should be given in medical colleges to

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teaching physiologic therapeutics, diet, climate, hydrotherapy, etc. While drugs were never used more discriminately nor more happily than now, yet there is a distinct tendency to emphasize the value of physiologic methods.

There is not necessarily any mystery about disease; it is a life process and works through laws that elsewhere make for health. It ought to be an important part of our therapeutics to utilize those natural forces through which life came and health is kept. Are air, exercise, electricity, which are so necessary to any living process in health to be discarded in sickness for tablets and the latest fad from a laboratory?

Cohen says the "disordered functions of the paralytic are equally physiologic with the co-ordinated functions of the athlete." That is, that disease is as natural as health. In the ataxia of tabes, physiologic processes, though pitiably crippled, are still at work, through substitution, or by roundabout paths, or a thousand makeshifts of function. By using these natural means that I have referred to, we abbreviate and individualize in many ways those forces that have been part of life, and that have made it what it is, and to which every living thing has the race-old habit of beneficial reaction.

The older practice of writing a prescription and sending the patient on his uninstructed way with a pleasing illusion in his vest pocket was occasionally useful, but it was so easy that physicians sometimes became routine givers of drugs. The physician who regulates the patient's daily life is doing what is intellectually more expensive than the other, but it is the scientific way and the correct way, and the medical man who does this is as much above the mere drug giver as the architect is superior to the carpenter.

It is a thousand times unfortunate that this side of medicine has been so long neglected. One result has been that many people never having been told how to live in order to be well or to get well, and weary of the round of drug stores, have gone to the Christian scientists and their like, who at least have the merit of giving their victims something besides their ills to think about, however poor

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the quality of the thinking. We hope to have this winter lectures on the Hygiene of the Mouth, a subject of great importance to health, and in the near future we should arrange for lectures on dietetics and instruction in scientific cookery. I hold that every doctor should himself have experience in preparing food, and gain a practical knowledge of that art which probably has more to do with human health and happiness than any other two influences that touch the life of man.

As everyone owes his brain power and his personal capital of health largely to the toilsome lives of those who have gone before him, so we in common with all medical men are debtors to the Harveys of our profession, the growing men, the discoverers of all ages both great and small, renowned and obscure, who through love of knowledge and of their kind, have built up and handed on to us the science that we make use of.

Our debt to others is and will remain infinitely greater than our achievement. All that we can do is to add to human knowledge and lessen suffering is but a beggarly work in comparison to the stock of knowledge and experience that we inherit as a part of the intellectual capital and social equipment of the race.

Consider the hundreds of men, physicians, physicists, chemists, and others who lived, and most of whom toiled and died in obscurity, before a Pasteur, profiting by their work, could make his great discoveries. The systematized and organized knowledge that goes to make up what we call science is being accumulated, sifted and arranged by many men all over the world, and it is upon this work of the forgotten thousands that such geniuses as the Pasteurs and the Virchows build and finally attain an immortality.

We, too, should strive to be builders, not of our private fortunes and our petty fame, but of a solid foundation for the profession of the future that in this vicinity at least will inherit what is good in our work.

In these days the pioneer stage is brief, and this young empire of Southern California, within whose boundaries all of New England could be placed, has grown rapidly toward

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the organized, refined and cultured life of the older States. No part of the Union has come so near being born and grown to maturity over night as Southern California. From Maine to Pennsylvania people have come here in train loads and by the thousands representing the intelligence, the aggressiveness and the success of the East.

There was never better material nor higher incentives for those, who, like us, have been appointed as builders of institutions, than are to be found here and now. We should attract young men to our corps of teachers, for with the preparation now obtained in colleges they are especially desirable. Institutions such as this should always welcome young men who have had special training at home and abroad, who are the product of that best modern combination, the drill of the laboratory and the discipline of the clinic; men who are capable, ambitious and unselfish, and who, when you and I lay down our work, will be able to take it up and do as much better than we have done, as the age that succeeds us will be better than ours.

If in our clinical teaching all our material is utilized, if methods are adopted that will bring out the entire value of every case, we can find here in this city all that we need for this work.

The vital thing in clinical teaching is thoroughness. Quantity of material and variety of clinical forms are important, yet they are of secondary value to the painstaking care that never omits a fact in the pathological history, for by this the student will come to see the advantage and develop the habit of careful, minute and systematic investigation. This can be done in a city of one hundred and thirty thousand if the teaching is of the right sort.

The history of medical men in Germany and in this country shows what can be done in clinical investigation or in surgery or in original research in the smaller cities. President Garfield's remark that a student on one end of a log and Mark Hopkins on the other end made a university, is significant here; it is not alone the size of the amphitheater nor the quantity of the material, it is the man and the method. By such methods the student learns to track

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every symptom to its source, and to correctly interpret the language of every sign.

The physician who has had this drill will have a system in his work that adds to the effectiveness of talent and he will differ from the man who is without it as the lawyer differs from the notary. He finds there is nothing irregular or haphazard about disease, that the morbid undoing of life is as orderly as the health processes, that in the language of John Locke, every morbid condition has its natural history, the business of the physician being to find the order hidden in the seeming chaos of disease. The habit of taking pains that such methods develop and the resulting skill in diagnosis have made the fame of the Trosseaus, the Stokes, the Fengers and the Oslers.

You and I in common with all medical teachers are on trial. Every year we will meet a more intelligent and a more exacting criticism. Are we the men, and have we the methods? If we are to meet the increasing demands that will be made of us, our work can answer these questions only in the affirmative.

In our teaching we must lay increasing emphasis upon the relation of chemistry and physiology to clinical medicine. The chemistry of life is no longer a vague phrase, and chemical pathology is a part of science that every physician must be acquainted with. The importance of sodium in the elimination of carbon dioxid, the relation of acid intoxication to diabetic coma, and other illustrations that will occur to you show how directly our therapeutics depend upon a knowledge of physiologic and pathologic chemistry.

We doctors should cultivate more intimate personal and professional relations. The differences of doctors have furnished occasion for many a sneer at our profession. So much of a doctor's success is due to personal popularity that unfriendly rivalries occur, and small men sometimes descend to the petty and vulgar business of jealousy. Happily there is less of this in the profession than formerly; the more intimate professional relations of physicians and a cultivation of interests that are more scientific have made rivalries less unfriendly; generosity, kindliness and a sense

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of brotherhood are growing in spite of self-seeking and of those odious qualities that belong to the slums of human nature.

The profession of this city should have clubs and societies where they come together frequently for professional and also for social purposes. The members of this faculty should have a meeting of this kind as frequently as twice a year. There is a great advantage, and one that has in it humanizing tendencies in meeting your competitors and your associates away from the formalities of business and under conditions that inspire good fellowship. In the rivalries and clashes of the day men perpetually misunderstand each other. The man who is indifferent to you or who dislikes you will hardly be able to conceal it, for here at least the features and the manners gossip, while the hundred of admirers who pass you hurriedly by with only a nod may give no sign of friendliness.

Some one should write a book on the advantages of getting together, with a chapter in italics for doctors. What a really good fellow Dr. Coldshoulder is when in the companionship of a banquet you have cracked the shell of his reserve aud the smoke of your cigars has mingled and narcotized old animosities.

Our lives as doctors are public and for the public. All lives are essentially so, for separate as the individual life seems to be, yet each one as he goes about his daily business is going also upon the errands of society. Nature has so arranged it that we live under a perpetual illusion, for while we seem to be accomplishing only our private and personal ends, yet in a larger sense we are serving society, whose beautiful and moving order antidated and will survive us. Our professional work therefore is a contribution to society, for in all we do we serve, and when we shall have left this world, the things that we have done here that our friends will care to mention, or that the world will remember, will be those only wherein we helped mankind by furthering the social purpose. Considering that society protects us in all we have, and helps us to be what we are, that our property is made safe, our homes guarded,

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schools established, violence prevented, justice assured us, we should have a personal interest in the welfare of the community. Medical men especially should interest themselves in everything that relates to public health, from the condition of the streets to the health of the children in the public schools. I have not a doubt that if even three or four courageous men among our local physicians would take an interest in the health of the children in the public schools of this city, not only would much suffering be prevented, but the average of the health and the vital capacity of the next generation in this community would be increased.

Though we may not be able, ourselves, to see it, these must be fortunate days for us and our work. Not the least advantage in teaching is the benefit to the teacher himself, and then, too, in many ways that he may never know of, he is helping to make the world a little better and is adding to the sum of human happiness. It is a most difficult thing to assess man's work at its real value, to see in it what is permanent, and what is transient. A Wallenstein or a Gustavus Adolphus may sweep through Europe and change the map of empires and yet a century later the historian may quietly sum up in a few pages all that history has to say of what he did; while a Plato or a Froebel, modest, sweet tempered and careless of fame, works on without display and the ages are his debtor.

In smaller ways than this, though in no less real ways, every teacher has an enduring influence, and through the character that he helps to make the projects his life ideals into the future. Prof. Thomas Davidson, the great teacher, said that students got more benefit from their association with their teachers and with each other than from all they learned at college. The teacher becomes an ideal for the student, and long after what he has taught has been forgotten his personality may be an enduring influence and inspire the lives of others.

This institution has an obligation common to all where teaching is done, and that is the obligation to grow—to grow in method, in facilities, in quality of instruction and in

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reputation. The world of knowledge grows, sciences are forever being reconstituted and medical teaching must meet the demands of progress. It is not a reproach; it is the glory of our profession that it changes. New facts come with experience, old theories are recast, old remedies are abandoned, and it is only in this way that medical science gains in accuracy and definiteness. Seventeen hundred years ago a celebrated physician said there seemed to be nothing left for the medical man of the future to discover. We have learned, however, that there is nothing final in human knowledge, and that in spite of all the facts that physicians have put in tomes, we are yet but at the beginning of what medicine will be; we are explorers who have but touched the confines of an unknown continent. We cannot now, or at any time, stop with the work of yesterday. No plan that we can devise, no improvement that we can make, no helpful influence that we can draw to our aid, is to be considered as final; each gain is only another advantage from which we are to go on to new achievement.

Every year these questions must come to us as a faculty; how are we to meet the new conditions, what are we to do that will make our teaching better, how can we add to the value of the work of this college?

Representing, as we do, an educational institution, we are an important factor in the growing and complex life of this commonwealth; and as medical teachers we have a responsibility that goes to the vital issues of the life of society, a responsibility that concerns all the relations of men, that enters into every home, sits at every fireside, deals with the most sacred confidences, and with the hopes and lives of men. We must not, ourselves, fall below the highest standard; we must strive to be at the front, and help in common with the army of progressive medical men to gain those peaceful victories whereby human suffering is lessened, and character is shaped and the lives of men made better.

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HEMORRHAGIC INTERNAL PACHYMENINGITIS IN THE INSANE.

By J. E. COURTNEY, M. D.,

Assistant in Neurology, Gross College of Medicine, Denver, Col.

GOWERS on "Diseases of the Nervous System" as late as 1898 says of the above disease "the malady is very rare and it is indeed of interest chiefly as a pathological curiosity enigma, for it has not often been suspected during life." Any one who has done many autopsies on the insane knows that the statement does not hold for this class.

Since 1896 when I published an illustrated article on this subject in the New York State Hospital Bulletin I have seen a number of cases and performed several autopsies. It is perfectly possible to diagnose the condition which is a valuable and gratifying thing to do, although little more than palliative measures for relief can be applied since the causative conditions continue to act.

In my autopsies on the insane, the condition was found more or less pronounced in nearly 10 per cent of all cases. Blackburn, of the Government Hospital for Insane at Washington, D. C., in a special report on the subject, in 1897 found it in 197 cases in 1185 autopsies, and he left out 12 cases in which "the inner surface of the Dura showed faint rust colored pigmentation without demonstrable new membrane." The writer has always counted these cases, considering them as belonging to one of the stages of Pachymeningitis. Blackburn's large per cent may

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be due to a larger number of alcoholics and general paratics in his series of autopsies.

I have never observed the membrane any more than loosely attached to the Dura and never strong or tough adhesions in any sense resembling pleuritic adhesions, the result of fibrinous exudate without hemorrhage.

The pathology of the condition has been much disputed but it certainly seems to be hemorrhagic, antedated, of course, by inflammatory changes in the Dura, Pia, and degenerative and vaso-motor changes in the cortical circulation. In traumatic cases such antecedent conditions need not exist, the initial hemorrhage being the direct and immediate result of the injury.

Drs. Spiller and McCarty, of Philadelphia, in the case of a 9-year old imbecile girl found the adventitious membrane in various stages of organization and absorption and formation of vessels. Their experiments on cats failed to produce any false membrane by simple irritating to inflammation the inner surface of the Dura. Whereas an induced subdural hemorrhage in these cases did produce a false membrane. The induction of a simple acute inflammation then does not suffice to explain the formation of membrane, there must be a highly congestive state of some duration. The percentages in which the condition is found in the several types of insanity are about as follows: 40 per cent each of general paralysis and alcoholism and 20 per cent made up about equally of senility and the various terminal dementias.

In general paresis and alcoholism the cerebral excitation, repeated and violent engorgement of the cerebral vessels and conditions generally of meningo cerebritis account for the initial hemorrhage, the subsequent ones being always easier. In the dementias and senility with atrophy; the active causes are deterioriation of the vessels and lack of support and a certain amount of suction caused by the shrinking of the brain in the skull cavity. A slight hemorrhage may cause only symptoms of irritation masked by the mental condition and the blood being absorbed leaves only a rusty stain or a very delicate adventitious layer

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which on autopsy will peel from the surface of the Dura, like the skin from a scalded tomato. A film of this membrane under the microscope without any preparation shows vessels with delicate hyaline walls, and spots of pigment left from the absorbed blood. Once hemorrhage occurs the membrane forms by a process of absorption, organization and attenuation and attains a feeble circulation of its own. The hemorrhage is more common at the vertex, the limits of the spread of the blood being determined by the amount, and the distance it may force itself between the brain and the Dura; the thin outer edges solidifying first forms the margin of the future sack. Successive hemorrhages may take place from the walls of this new membrane and going through the same process a number of layers may form, and finally a large hemorrhage take place between these layers making a haematoma and causing the marked symptoms on which a diagnosis may be based. The tolerance of the brain to pressure under these circumstances, if the haematoma forms slowly, is wonderful in one of my cases; the sack was actually tied to prevent the escape of blood and taken out to be photographed; See Fig. 3. A knowledge of the pathology and course of this trouble enables one to explain many obscure symptoms in the progress of some case of insanity. There may be evidence of cerebral irritation, shocks and symptoms of compression disappearing when the pachymeningitic hemorrhage is absorbed; these phenomena may be repeated several times. In the rare cases occurring in persons not insane, subdural hemorrhages and absorption explains the peculiar accession and recession of symptoms of cerebral pressure. The same observations may apply in traumatic cases, in which subdural hemorrhage followed the injury.

A few cases of this disease in which autopsies were done are cited.

Case 1. Anna B., age 35, insane 12 years, dementia following mania; mother, uncle and maternal aunt insane and a sister epileptic; first evidence of this disease was an epileptic seizure; it was short, she did not go to bed. One month later she had another attack. The pupils were

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contracted and irresponsive, and gait ataxic, but she kept up and the symptoms slowly improved; after another interval of about a month she had another epileptic seizure, coma, and died in 12 hours. Autopsy showed a reddish yellow, fine membrane on under surface of Dura over the vertex, temporo spheroidal region, and middle fosso, on under surface of this new membrane was a recent hemorrhage only slightly organized.

Case II. Adolph B., age 49, alcohol habitue, father died insane. Case of general paresis. Six months after attack began he was "prostrated" for several days; a year later he had a "very weak spell" and was in bed for several days, several times in the course of his disease he had paretic convulsive seizures. He died in three and one-half years from the beginning of the attack; he had become very demented and fatuous and died in a sturperose state. A large pachymeningitic membrane showing several layers covering the vertex on both sides Fig. 1.

Case III. Wm. B., age 42, single, intemperate, found asleep in a yard by police and locked up; could not tell anything satisfactory about himself, dull, irrational, shuffled when asked to walk, when examined he was depressed, restless, seemed unable to walk unaided and said some one had struck him on the head; pulse good, respiration twenty-one, temperature 101, pupils contracted. Slept four hours that night and next day continued dull, confused, incoherent and tremulous. In three days had a convulsion, shoulders twitched, face congested, pulse full and strong; he soon passed into a stupor with stertorous breathing. The next day he revived a little, had cough, dyspnoea, pain in chest and intermittent pulse, he died in the evening. Autopsy showed a large haematoma, covered by several layers of adventitious membrane, and full of blood and serum pressing deeply into the right hemisphere. See Fig. 2. The right pupil was still contracted at autopsy.

Case IV. Catherine D., female, age 40, found wandering about the streets and lodged in jail, charged with being "drunk and disorderly." She was incoherent, loquacious and at times lachrymose. She ruptured

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the hair from the parietal eminences. Three months later she was restless one night and getting up fell to the floor, after which she was fatuous, mute and soon went into a state of coma with contracted pupils; she died in ten days, having shown little lucidity. Autopsy showed large haematoma over both parietal regions, containing three or four ounces of blood and serum. There were deep depressions into the hemispheres, the convulsions were flattened. The walls of the sack of the hamatome were organized so that the right was tied and removed; the left was ruptured in removal, but let in situ. See Fig. 3.

As to the treatment of the condition it is largely palliative and dependent upon the management of the associated and causative disease. Quietude and the administration of a mercurial cathartic and iodide of potash offer the best results. The utility of trephining except in traumatic cases is doubtful, while pressure might be relieved by emptying the haematoma, it would soon refill. Blackburn in the report already referred to cites a case in which trephining was done and two years later at autopsy, the condition remained apparently unchanged, the opening in the new membrane had closed and it had refilled. My conclusions have been:

1st. That hemorrhagic internal psychymeningitis is a disease peculiarly associated with insanity, especially general paresis, alcoholism and the dementias and occurring about twice as frequently in men as in women.

2nd. It consists first in hemorrhage and partial absorption and organization of the effused blood forming a membrane varying from a thin, rust colored film to a well defined membrane of several layers inclosing blood and serum.

3rd. The diagnosis can be based on contraction of the pupil (on the side of the membrane) or if haematoma exists partial hemiplegia hebetude and stupor or coma. Sometimes preceded by headache and convulsive movements. If such attacks are successive with partial disappearance of symptoms it is significant of repetition of small hemorrhages.

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Fig. 1

Fig-2

Fig-3

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THE NEURAL AND PSYCHO-NEURAL ASPECTS OF SURGICAL PRACTICE.*

By CHARLES H. HUGHES, M. D.,
ST. LOUIS, MO.

Former Surgeon-in-Chief of Hickory Street, M'Dowell's Prison and Winter Street Barracks Hospitals; Professor of Neurology and Psychiatry, Barnes Medical College; Editor Alienist and Neurologist.

I speak to you to-night by warrant of both surgical and neurological experience—an early life surgeon, later evolved by an unusual line of clinical experience into a neurologist. But like the memory and influence of an old love, my heart turns back to its first fancies and seeks to secure good to the object of its early affection. The first decade of my professional life was surgical; the latter has been medico-neurological.

Surgeons have long known the significance of knee pain in hip-joint disease through neural knee-joint connection. The importance of the nervous system in its relation to surgical diagnosis had a forceful exemplification in the case of the lamented President Garfield when that persistent pain in his toe and foot, which the distinguished patient complained of, was spoken of daily by him, without due notice being taken thereof by his surgeons, as referring (which it did) to its source of anatomic irritation in the lower lumbo-sacral spine, where a vertebral injury was discovered post-mortem, as having been in the track of the

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Note--This paper is part of a chapter in the author's forthcoming book in "Neurology and Neuriatry, Psychology and Psychiatry in Practice."

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assassin's fatal bullet. (Tarsal branches, anterior tibial; branch of the external popliteal; branch of sciatic, origin of sciatic (great) lumbo-sacral spine, sacral plexus, 1st, 2d, 3d and 4th lumbar; 1st, 2d and 3d sacral) That great operation on the nervous system, trigeminal gangliectomy, for which Spiller and Frazier now propose division of the sensory root within the cranium for tic doloureux, as a substitute for all other operations on the Gasserian ganglion, reminds us also how closely in touch are neurology and surgery, and the latter improved results, according to Krause and Carson's records for Gasserian ganglion excision, show the conjoined benefits of improved surgical technic and advanced neurotheraphy. The screening of the eye alone doing much more to save the central nervous system than the external eye alone.

I first invite your attention to

TUFFIER'S LUMBAR PUNCTURE IN SURGICAL DIAGNOSIS AND PROGNOSIS.

Tuffier's remarkable lumbar punctures, which I have had the opportunity of witnessing in Paris, have developed much more than therapeutic significance. Tuffier himself gives the operation diagnostic significance in an article in the Bulletin and Memoirs of the Society of Surgery last year (No. 27), suggesting that subarachnoid effusion of blood mingling with the drawn cerebro-spinal lymph meant internal spinal fracture. Here is a diagnostic procedure of importance in obscure fracture of the vertebrae, with possible greater internal than external damage to the integrity of the spinal canal and the important nervous structures and vital centers of sensation, motion and visceral function which this neural bony conduit encases and protects.

Suppose lumbar puncture had been in vogue in surgery at the time of President Garfield's fatal wounding and employed in that remarkable case, *i. e.*, provided that President Garfield had had for his medical counsel a really advanced expert surgeon, at the beginning of his wounding, in full rapport with the present wonderful resources of

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neurology and surgery in diagnosis? At it was, President Garfield had, at the commencement of that fatal case, the counsel of a medical politician, more noted for his political pull than his surgical skill, and famed chiefly as the advocate and promoter of the now exploded Condurango cancer cure, that was then working marvels like oil wells and some of the gold mines of the present day and other fakes in the newspapers.

Lumbar puncture for diagnostic purposes is a procedure for the later stages of suspected spinal injury, either of the meninges, the cord proper, or the bony canal, after giving the effused blood, which is likely to be small in quantity in the beginning, time to accumulate and stain the cerebro-spinal fluid. In estimating the value of this new lumbar puncture sign the same principles would apply to it as elsewhere, viz., the extent and degree of hemorrhagic discoloration. This sign might also prove useful as one element in the prognosis of the possible after effects to the cord; those sequences of concussion and molecular injury to the cord, which cause so much trouble to corporations and so much real, as well as litigation, distress to victims of spinal injury concussion and cerebro-psychic shock and cause the clashing of victim and company, of neurologist and surgeon in the courts.

LUMBAR PUNCTURE AND NEURO—OR CYTO-DIAGNOSIS GENERALLY.

The lumbar puncture needle promises to be of as much service to the near and new oncoming neurology and surgery as the ophthalmoscope, microscope or the reagents of chemistry have been and now are. Neuro-surgical diagnosis and prognosis are even now receiving new impetus from them in many directions. Recently before the Medical Society of the Paris Hospitals, many wonderful and valuable reports have been made of this method of cyto-diagnosis, beginning in October, 1900, with the reports of Widal and Sicard and Ravaut, his assistants, to whose work the *Philadelphia Medical Journal* refers

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editorially with well-deserved commendation. Since the first communication of Widal a flood of reports confirming the value of this method of cyto-diagnosis have appeared in the literature of clinical neurology and general medicine. Monod, as this wide-awake periodical notes, last year, in Paris, examined the cerebro-spinal fluid of fifty nervous patients, finding leucocytosis in locomotor ataxia and general paralysis, finding nothing significant in alcoholism, hysteria, hemiplegia or neuritis. Chauffard, Boinet, Rabaud, (same source as above, viz., Bulletins and Memoirs of the Medical Society of the Paris Hospitals for last year) confirmed the findings of Widal and his assistants in tabes and general paralysis.

Many interesting showings were made by examinations of the fluid too lengthy for detail here, among them Nageottes' finding that in syphilitic meningo-myelitis mononuclear leucocytes predominating in the cerebro-spinal fluid, while in the non-specific cases the majority of the cellular elements are polynuclear. The cerebro-spinal fluid was found normal in hemiplegia, brain tumor, etc. In tubercular meningitis, lumbar puncture showed increasing lymphocytes and low osmic tension, while this cerebro-spinal fluid injected into rabbit's caused tuberculosis.

Here is an important feature in which surgery may assure itself as to the state of the meninges after surgical operations and of the existence or nonexistence of tuberculosis, perhaps of the central nervous system, when spinal puncture is used for anesthesia.

The cerebro-spinal fluid after this operation should invariably be saved and microcytologically examined. The number of leucocytes should be examined and counted. Laubry (same source) reported a case of supposed tubercular meningitis disproved by this form of cytodiagnosis, where autopsy showed cerebellar tumor. This work is still going on actively in France. American surgery should take it up, and keep it up, until the new mine of diagnostic wealth shall have been worked out. In miner's parlance there is undoubtedly "rich pay dirt here," for clinical surgery as well as for neurology.

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IDIOTROPHIC AFFINITIES AND REACTIONS OF NEURONES.

The central neurones have their special nutritional or idiotrophic affinities appropriating what they need from the blood current for their nutrition, which means their growth, life and function and selecting their own peculiar manner of response to psychic, peripheral and toxic impression as we see in the phenomea of the reflexes of the brain and cord, the pupil reflex and the knee reflex for instance, the psycho-motor movements of a convulsion, the opisthotonos of spinal meningitis and tetanus, the tremors of sclerosis and paralysis agitans, the altered brain workings of convulsive tic, of trigeminal neuralgia, etc.

The physiology of the five or more senses is based on this peculiar reaction of central neurones to peripheral or central impression. They select their own special impressions of smell, taste, touch, sound, weight, etc. The knee kicks up, the foot jerks down, the chest expands, the gullet contracts downward, the bronchi and diaphragm contract so as to throw air and mucus upward, as in coughing, when their special centers are set into reflex action by peripheral excitation, so we also have the phenomena of fecal and urinary expulsion, peristalsis, etc., etc.

The irido or iris reflex is a true idio reflex. There is no other like it. It contracts to light and to certain drugs like eserin, and expands to darkness, atropin, cocain and other mydriatics. Idiotrophic means, strictly speaking, from its derivation (when applied to a neurone or group of neurones making a nerve center), a peculiarity of nutrition or selection of its nutrition. But we extend its signification. The selective affinities of certain centers of the brain or cord for anesthetic, motor or sensory impression or what has been called the selective affinities of drugs which are idiotrophies of the neurones, is a subject to thoroughly consider, and their psychic impressibility in surgical practice.

Barker, whose book is the bible of modern American neurology, as Nissl, Vangehuchten, Lenhossek, Cajal, and others are abroad, and, in fact, of the mundane neurology of our day, for in it are the sayings of the wisest and

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best sages and apostles of our faith, concerning the doctrine of the neurones, following a well-merited defense of Johannes Müeller, who gave to neurologic science the "doctrine of the specific energies of nerves," says "it has been left for the neurone doctrine to explain, if it can, why it is that on stimulation of the retina or of the optic nerve, for example, the response always occurs in one and the same manner; no matter whether the stimulation be by normal methods or by mechanical or electrical means, the sensation of light or of color alone is yielded; or how it happens that when a cold point on the skin is stimulated, whether it be with ice, the prick of a sharp tooth pick, an electric current, or a piece of hot wire (cold point paradoxical reaction of von Frey), the sensation of cold always results. The constancy of the quality of the reaction, despite the variability in the form of the external stimulus, is one of the most puzzling of the phenomena with which the neurologist has to deal."

To me this does not seem so puzzling in view of the idiotrophic properties of the neurone as I here use the term. Though Barker still considers the question as obscure and refers to well-known pathologic cases in which direct irritation of certain areas of the cortex "has called forth definite sense perceptions, as evidence that these sense perceptions speak for direct relation of these bodies to the specific energies of the sensory nerves." The explanation is in that wonderful individuality of the neurone, to which I have already referred as the crowning cap sheaf cytological discovery of the nineteenth century making the name of Ramon y Cajal immortal. The idiotrophic property of the neurone unit explains why "odors, images of colored objects, memories of muscular movements, and of sounds have been experienced by individuals suffering from the pressure of cysts and other bodies upon the corresponding cortical sense areas," and why normal sensations reappear in nerve centers when limbs are removed, and why memories of impression, psychic or physical, persist. We need not subject the matter to the test of reason. It appears as an axiomatic truth of the new cytology, that the neurone

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has this property, as the character and proof of its individuality as distinctive and individual as the selection of its own reconstruction, nutrition. As distinctive as its chromophile and achromatic properties.

THE NUTRITION AND CONSERVATION OF THE NEURONES, OR NEURO—AND PSYCHO-NEUROTHERAPY IN SURGERY.

The popular misconception of the surgeon is that he is only a cutter. This misconception extends often to the surgeon himself, and it is not always confined to junior surgeons, who might be excused for knowing no better. In consequence, there sometimes develops in the surgical mind a flippant skeptical treatment of the resources of medicine, especially of the wonderful modern neurotheraphy.

The popular misconception of the neurologist is that he is fitted to treat only nervousness and the neuroses of hypochrondria, neurasthenia and the imagination, and to fool with a lot of chronic maladies of the cerebrospinal axis and peripheral nervous system, requiring more time and patience than the average surgeon has to devote to them. But I tell you as a medical man of once extensive surgical practice, that neurology and neuriatry are fundamental in medicine and surgical practice, and they cannot be longer ignored in either clinical medicine nor in the most possibly successful clinical surgery. It is the surgeon who treats the whole patient, neuriatrically and psychiatrically and otherwise therapeutically, up to the advancing modern standards, who will carry the greater trophies of recovery in his warrior belt as the conqueror of disease.

There is a psychic and neural and psycho-neural antisepsis, as well as, and no less valuable, as affecting prognosis, than the antisepsis of the vascular and absorbent systems, which have made Lister and many of his followers immortal and enabled modern surgery to invade and rescue victims of disease from the very grasp of death. Added to Listerism and the dauntless skill of its world applauded votaries in your illustrious ranks, comes now mod-

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ern neuro-therapy that enables disease's prostrate and imprisoned victims to hold out through judicious cytological reinforcement, till the new and conquering surgery accomplishes its saving work and rebuilds and restores the assaulted central neurones.

THE PSYCHIATRIC FACTOR IN SURGERY

Consists in conserving the integrity of the psycho neurones by withholding from the patient and avoiding both during and after the surgical operation, everything that may tend to lower mental or physical vitality. To this end blunt announcement of an operation intended and abrupt statement of possible doubtful prognosis, the needless display of the surgical tray and the prelude preparations and discussion of the intended procedure by nurses, except under the specific, detailed directions of the surgeon, should be avoided.*

The employment of anesthesia in our day has saved patients intended for the operating table much psychic shock they did not escape in the past. If to this should be added the anesthetizing of the patient in a cheerful flower decked, gratefully odored room, without any appearances of the coming bloody ordeal, and the patient wheeled into the operating room while anesthetically unconscious, psychic conditions of restive recuperative central nerve tone would be enhanced.

PSYCHICAL DEPRESSION AND THE NEUROPATHIC DIATHESIS.

As a sound neuro-surgical aphorism I should say, from the standpoint of a broad experience, avoid all sources of psychic depression and consider well the nervous system of

*The little surgeon who pompously displays his tray of instruments before his trembling patient and to his woeful wondering mind decants upon the operation he is about to perform, and the chances of recovery, or displays a nonchalant unfeeling mien, acts unwisely and does not increase his patient's chances of getting well quickly.

And the great surgeon who takes his patient into the operating room and places him while conscious on the table, himself with instruments in hand, while white aproned attendants gather around the victim, approaching with sponge and bottle and instruments and appliances of the impending operative procedure, is not so wise a surgeon, and does not so fully consider the effect of depressing psychical influences as he who chloroforms the intended subject of an operation in another room or in the same room without these depressingly suggestive influences.—*Alienist and Neurologist*, Oct., 1896.

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your patient before and after every operation. There are some constitutions so neuropathic and psychopathically predisposed that the shock of such an announcement would precipitate a crisis of mental alienation and it were better that the proposed operation should be abandoned than insisted upon under such circumstances, or that the patient should be gradually approached and prepared by cautious speech and suitable precursory reconstructive and tranquilizing neurological treatment. Many of the post-operative insanities and neuroses result from awakening into active life the psycho-neuropathic diatheses and might not result in neurotically well-prepared or psycho-neurotically well endowed nervous organisms.

And these, gentlemen, are the victories of modern surgery: A skilled technic never before equaled. Anesthesia, general, peripheral and spinal; antisepsis, cytotherapy. And the honors are even, for anesthesia and cytotherapy are ours. Antisepsis and the new operative technic are yours. Fortunately for mankind these advances are all in the one family and that family is one for the weal of a suffering world.

POST-OPERATIVE INSANITY.

As a suitable addendum to this paper, let me here quote one of my editorial criticisms from the *Alienist and Neurologist* of October, 1901: A St. Louis surgeon having performed an enterorrhaphy with acute mania without sepsis as a sequel gives this as a rule which he declares has been adopted by most surgeons, viz: Under no circumstances ought any insane woman to be operated upon unless for some distinct condition that is compromising life.

This is not as a rule based on clinical knowledge, with those who have done their own surgery in a hospital for the insane or have advised surgical procedures on the insane. Psychiatry looks at the subject differently. A grave surgical disease preceding insanity or supervening a psychosis may be removed unless the proposal to operate and the preparation and operative procedure are in the line of and tend to aggravate the patient's delusions. Rules of

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therapeutic procedure medical, moral or surgical in psychiatry are out of the range of the average surgeon's clinical experience and he should defer to psychiatric judgment in the premises and not formulate rules purely from the surgeon's standpoint. The practical alienist might enlighten surgery in some surgical quarters where surgeons walk in darkness and the darkness comprehendeth not.

I would like to ask if this is the rule adopted by most surgeons? If so it is not a wise one. Sources of physical drain and imitation should be removed, if practicable, from the insane and nervous as well as the sane and nervously well.

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SIMULATION OF TABES DORSALIS.

By PROF. V. KRAFFT-EBING.*

CASE I.

J., Marie, seamstress, 24, single, was admitted to the Clinic January 5th 1895.

Hereditary and acquired lues can be definitely excluded. The mother had simple constitutional migraine, the patient also since 13.

First menses at 16. After continuing for six months they were suppressed for a year.

At 15 the patient began to have paroxysmal cysto-spasm, as well as temporary relative incontinentia urinae et alvi.

Since puberty great excitability, emotionalism, often crying for no cause, globus in affect.

Since 16 patient noticed, that when she let the feet hang down so that the tips of the toes touched the floor, tremor of the legs (*trepidation spinale*) occurred, she also felt uncertain in walking, especially on a slippery floor.

In the 19th year (January 1890), during an attack of migraine and after intense excitement, patient noticed, when she tried to get out of bed, formication, tremor, weakness, inability to use the lower extremities. She then remained in bed 8 days owing to alleged paraplegia. Then she was able to walk again passably, but was weak, uncertain on her legs, knees giving way, tiring very quickly. Besides formication in the legs from the knees down. It was especially hard for her to walk in the dark room at night.

*English by Dr. W. Alfred McCorn.

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After two months' electrical treatment the patient was able to walk without support, yet she often fell.

In July 1894, after excitement, marked impairment of the gait, *i. e.* increase of ataxia, amosthenia and on beginning to walk, stiffness in the hip and knee joints.

Since October 1894 patient noticed awkwardness in finer manipulations. She often dropped her needle when she looked aside; she must give her constant attention in walking and did not get on so quickly with her work.

For a short time slight pain in the upper vertebrae. Cessatio mensium since September 1894.

Walking has recently become so bad that the patient constantly stumbles over door-sills and furniture, so that she was covered with black and blue spots.

Condition January 7th 1895.

Patient of average strength, well nourished, without vegetative derangements. Cranium with transverse, saddle-like depression, circumference 54 cm.

Intention tremor of the bulbi in extreme lateral movement. The pupils react normally and present constant hippus. Slight concentric contraction of both visual fields, no dychromatopsia, slight ambylopia in the left eye, fundus normal. No other disorder of the cranial nerves.

No amosthenia, no rigor, trace of intention tremor in the upper extremities; in repose no tremor, no ataxia, not with eyes closed. Deep reflexes essentially exaggerated.

In the lower extremities more uncertain, reeling gait, often staggering to the right. Great static ataxia, increased to falling with eyes closed. Marked swaying while standing with eyes closed.

Gross muscular strength good, except slight amyosthenia in the muscles of the ankle.

Movements of locomotion as well as those in bed present ataxia in the lower extremities.

Rigor exists neither in passive or active movement. The deep reflexes are greatly exaggerated, even to foot clonus, the plantar reflex is active, cutaneous and deep sensibility intact, likewise in other parts of the body. The

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whole vertebral column, sternum and lower half of the abdomen are very sensitive to pressure.

The static and locomotor disorders changed greatly during the following period of observation. Many days the patient presented more the picture of a tabes, others that of Friedreich's ataxia. She then staggered extremely, could not walk without watching the feet, not stand with feet together and then always fell to the right. In the recumbent or sitting posture, *e. g.* in tracing a geometrical figure, marked ataxia exists. Still the patient is able to execute jumping movements quite accurately. Many days with eyes closed the index fingers cannot be brought together.

On January 18th the patient completed her anamnestic statements by saying, that her trouble had arisen from disappointed love and that a coition much against her will has contributed. The memory of this violence is very active and combined with disgust.

After these communications corresponding to the adjustment of a long existing affect and under proper verbal suggestion, the ataxia disappeared on January 19th, and foot clonus was no longer to be elicited. The death of a sister on January 28th produced the ataxia again. Since then an unstable condition. At times the patient is left to herself, marked, especially static ataxia appears, but it may be overcome by proper verbal suggestion.

On February 15th 1895 rudimentary hysterical seizure (extensor spasm of the upper and lower extremities with slight clouding of consciousness).

Under gymnastics and verbal suggestion gradual disappearance of all motor disorders. Discharged recovered March 9th 1895.

A recent examination in August 1896 confirmed the absence of all objective symptoms. But the patient complains that she feels uncertain after walking for a long time.

CASE II.

K., 31, helper, of an untainted family, was perfectly well until 21, when he first had variola and then diphtheria.

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He drank wine moderately, was a heavy smoker, had been very excessive in venery, but had escaped venereal diseases, except gonnorrhea (1887).

In June 1889, when 26, patient had pains in both crural regions from no perceptible cause, which occurred at intervals of one to five days, lasting two days and, according to the description, was of a thoroughly lacerating character. During these attacks of pain retention of urine occurred, which rendered the employment of the catheter necessary. When free from pain the function of the bladder was normal.

Early in 1890 the gait became uncertain. He staggered, was often in danger of falling, no longer trusted himself to walk without a cane, very unsteady in going up stairs; these troubles were much greater in the dark. In July asthenopic symptoms appeared—the latter became blurred, indistinct in reading.

From October 3rd 1890 to March 5th 1891 the patient was in the hospital on account of a pleuritis.

The history at that time shows: right abducens paretic, double vision in the outer visual field, light reaction of the pupils sluggish.

An anaesthetic area in the middle of the forehead; right facial somewhat paretic, the tongue deviating to the left on protrusion. The spinous processes of the eleventh, twelfth dorsal and first lumbar vertebrae sensitive to pressure. Lightning-like twitching of the muscles of the thighs. The motor strength in the lower extremities reduced, right more than left.

Ataxia of the upper and lower extremities, markedly increased in the dark. Romberg's sign positive. On the external surface of the right calf below the knee a sharply defined anaesthetic area ten cm. long, five cm. broad. The muscle sense in the lower extremities extinct (sense of position absent, defective sensation of passive movement in all the joints). Patellar reflex very prompt; in testing the plantar reflex Westphal's paradoxical phenomenon occurs. Plantar reflex greatly exaggerated. Girdle sensation at the height of the epigastrium, gait on a broad base, reeling.

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Under hospital treatment marked improvement in all these symptoms. The abducens paresis disappeared in February 1891. At the same time the facial asymmetry and the deviation of the tongue.

From 1891 to October 1894 patient was able to work some, yet the pains in the crural region returned now and then. Owing to their marked exacerbation patient came to the hospital again on December 13th 1894.

The last time, following excitement and alcoholic excess, patient was incapable of work, had become irritable, had head pressure, unsteady gait and feeling of numbness in the lower extremities on awaking.

Condition December 27th 1894: patient large, strong physique, well nourished with no pathological condition of the vegetative organs, free from traces of lues, presented negative condition of the cranial nerves, except hypaesthesia for all qualities in a circumscribed area of the skin on the forehead, which extended from the root of the nose to the hair and 0.5 cm. to the right of the median line and about 1. cm. to the left.

No pathological condition is found in the upper extremities. On the right side of the abdomen a small, on the left a large sharply defined basin-shaped spot is found, where the sensitiveness to all cutaneous irritation is significantly blunted. A like zone extends dorsally from the tenth dorsal vertebra to the middle of the sacrum.

Still in this area the perception of cold is retained. The spinal column is sensitive to pressure from the eleventh dorsal to the third lumbar vertebrae.

Patient stands on a broad base and sways as soon as it is lessened by bringing the legs together. In looking upward this swaying is markedly increased and with the eyes closed he threatens to fall. The gait is on a broad base, classical heel walk, stamping, shuffling, scarcely to be differentiated from the gait of an advanced tabetic.

The motor strength in the lower extremities is everywhere reduced, but especially in the area of the peroneal nerves, still the muscular tone is good.

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In intention movements tremor appears, which is intensified in resistance by the physician, temporarily increased to clonism in the quadriceps cruris and gastronemii. Such clonism occurs in the lower extremities from any cutaneous irritation.

Rigor exists neither actively or passively, still in passive movement of the knees, active, if involuntary contractions in the extensors are met with.

The patellar reflex is exaggerated to clonus; in attempting to elicit the plantar reflex paradoxical contracture occurs.

At the height of the navel a girdle-like sense of constriction about ten cm. broad exists.

About every three days the patient has his attacks of lacerating pains in both crural nerves. In the intervals this area is sensitive to pressure. Trophic disorders, changes in electrical excitability do not exist.

The cutaneous and deep sensibility of the lower extremities is found to be intact, except hyperalgesia on the dorsum and planta pedis, as well as thermic hypaesthesia from the knees down to the toes, further the area on the external surface of the right calf above mentioned. This area about the size of the hand is tactically hypaesthetic. Within this geometrical figure is found a smaller area of analgesia. Here cold is everywhere sensed correctly, but warm nowhere, which yet is now and then perceived as "cold". Plantar reflex greatly exaggerated, abdominal and cremasteric reflexes normal. The functions of the bladder unimpaired, also at the time of the attacks of pain.

Cutaneous irritation of the hyperaesthetic foot area always produces maximal peroneous contracture.

Pressure on the peroneal nerve at the capitul fibulae produces prompt contracture of the tibialus anticus on the left, which is then replaced by one of the extensor hallucis and other extensors of the toes.

On longer observation the clinical picture is complete in the way of paroxysmal globus, bilateral myodynia "(ovarian tenderness") in the hypogastrium, concentric contraction of the visual field, occasional ructus. The emotional-

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ism, impressionability and the great instability of the patient's mood are conspicuous. Pharyngeal and palate reflexes became blunted during the course of the disease.

The supraorbital nerves, all those of the lower extremities are always very sensitive to pressure, now and then cramps in the calves occur.

Under baths (24-20° R.,) electricity, tonics, the motility significantly improved during the spring of 1895, the attacks of lacerating pains became more rare.

The examination May 19th 1895, shortly before the patient's discharge, revealed that the locomotor ataxia had disappeared, the gross muscular strength approximates the norm. The "static" ataxia remains conspicuous. Standing is possible only on a broad base and eyes open. With eyes closed, tremor, swaying and a tendency to fall backward occurs, yet the impression is gained that a good part of these phenomena are of psychical origin and the swaying may be essentially improved by suggestion. The hyperalgetic places on the feet have disappeared and with them the possibility of producing reflex contractures. The hypaesthetic places on the forehead, abdomen and right leg continue unchanged. Otherwise the sensibility is everywhere normal. The hysterical stigmata have disappeared.

On the patient's clinical presentation in January 1895 the diagnosis of hysteria was made, probably combined with alcoholic neuritis in the area of the crurals.

In spite of the great similarity of the disease type to tabes, this possibility, if only as a complication, must be denied, for the pupil reaction remained intact, the patellar reflexes were exaggerated, also the plantar. Likewise the marked remissions, the suggestive influence on the disordered motility, the intact muscle tone in spite of the many years' duration of the disease, the conspicuous brevity of the preataxic stage, exclusion of hereditary and acquired lues in the patient's previous history, the early onset of the disease at twenty-six.

All spoke for hysteria, especially the temporary hyperaesthesia of the feet, terminating sharply at the height of the ankles, the temporary diathese de contractur in the

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hyperaesthetic area, the paradoxical contracture (Westphal), etc.

CASE III.

Souques, etude des syndromes hysterique simulateurs, Case 53, p. 133.

P., 37, ironer, admitted November 29th 1888, apparently no hereditary taint, delicate, sickly from childhood, left her husband, an inebriate, with whom she had lived unhappily, after she had been thrown in the water by him December 25th, 1878. Three months later progressive weakness of the lower extremities began. In 1880 lacerating pains appeared, likewise spinal irritation and conditions similar to gastric crises. Progressive impairment of the gait, uncertainty, paroxysmal giving way of the legs. After the pain crises, spots of cutaneous hypaesthesia frequent.

In 1889 weakness of vision, paroxysmal diplopia, difficult urination.

In 1890. For two years paraplegia of the lower extremities. Patient remained in bed. Varoequinus position. Gross muscular strength blunted more on the right than on the left. Deep reflexes exaggerated. In upper extremities amyosthenia, right more than left. Continuation of the attacks of lacerating pains, gastric crises, loss of the cutaneous and deep sensibility in the lower extremities, the deep in the upper. Cutaneous hypaesthesia over the rest of the body. Tenderness to pressure of the dorsal and lumbar vertebrae.

Pupil reaction normal, opthalmoscopic condition negative, visual field not contracted, slight micromegalopsia. Bilateral amblyopia of 1/15. Homonymous diplopia of one m. distance. Slight detrusor weakness. General condition good. Vegetative organs normal. No syphilis. Pharyngeal anaesthesia. No convulsive seizures. Capricious, hysterical character.

CASE IV.

Soques (ibed, Case 54, p. 137).

P., 42, day laborer, no certain hereditary taint, irrelevant diseases, no lues. Following typhoid in 1890, par-

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aplegia with attacks of lacerating pains in the lower extremities, also girdle pain and spinal irritation. Progressive seizures of hysteria gravis with hallucinatory delirium. After one of these retention of urine appeared. Patient was capricious, quarrelsome, went from hospital to hospital.

Condition August, 1890: gait more impaired, legs giving way, with body bent forward, short steps, ataxic, the feet crossing, falling with eyes closed. Attacks of pain, girdle pain and spinal irritation unchanged. Gross muscular strength greatly reduced in the upper and lower extremities. Deep reflexes normal. Retention of urine. Cutaneous anaesthesia for all qualities general, except three sensitive places on the right side of the face, pharyngeal anaesthesia. Hysterogenic zones over the right hip and spinal column (lumbo-dorsal region), concentric contraction of the visual field on both sides. Achromatopsia. Fundus normal. Pupils of medium size, reacting sluggishly to light and accommodation.

Ageusia, anosmia, hypacusia. No vegetative derangements.

CASE V.

Souques (ibed, Case 55).

A., 36, compositor, admitted in July, 1890, untainted, free from lues and alcoholism, healthy except swamp fever and typhoid many years ago, at the end of 1889 after intense excitement Basedow's disease apppeared, became addicted to morphine, for three months has had lacerating pains in the lower extremities, girdle sensation and gastric crises.

On admission no ataxia, but uncertainty and swaying in turning. Romberg positive.

Patellar, triceps and plantar reflexes absent, also the pharyngeal. Fuzzy feeling under the feet. Painful, hyperæsthetic zones over the abdomen and spinal column. Otherwise cutaneous anæsthesia for all qualities general, anæsthesia or conjunctive and buccal cavity. Feeling of passive movement and sense of position everywhere extinct. Leg muscles sensitive to pressure. Anosmia, ageusia, hypacusia,

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concentric contraction of the visual field, dyschromatopsia, except for green and red. Left amblyopia, monocular diplopia and micro-megalopsia. Möbius' symptom. Pronounced Basedow's disease. Great emotionalism and irritability.

CASE VI.

Leval Piquechef (Pseudotabes, These de Paris 1885).

O., 39, tailoress, admitted in May, 1885, tainted, emotional, afflicted with migraine. Onset four years ago with spinal irritation, lacerating girdle pain, weakness of the lower extremities, gastric crises. Later diplopia, amblyopia, vertigo. On admission: spinal irritation, lacerating pains, right patellar reflex blunted, pupils normal, swaying, uncertain, slightly ataxic gait, greatly impaired with eyes closed.

General retarded apperception of cutaneous irritation, slight analgesia, pharyngeal anæsthesia, formication in the fingers, deep sensibility intact, no sphincter troubles. Leval diagnosed tabes, Huchard hysteria. Rapid recovery under suggestion.

CASE VII.

Lecorchè and Talamon (ètude medicales, 1881, p. 550).

M., 23, lady's maid, admitted in February, 1879. After intense excitement, pains in the epigastrium and right upper extremity, numbness in the right upper extremity, then besides formication and cramps in both lower extremities, girdle sensation about the abdomen and ataxia of the lower extremities.

Globus, emotionalism, laughing and crying for no cause, ovarian tenderness; pressure over the ovaries induced globus. Anaesthesia of the conjunctiva. Numbness, stiffness, awkwardness of the right hand. Shuffling ataxia of the lower extremities, indication of Romberg. Sensibility intact, also gross muscular strength and sphincters. Deep reflexes exaggerated. No lacerating pains.

CASE VIII.

Michaut (Contribution á l'ètude des manifestations de l'hystèrie chex l'homme, Thèse de Paris 1890.)

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P., 33, merchant, of tainted family, no lues, no alcholism. Onset two years ago with formication pedum, fuzzy feeling under the feet, swaying, uncertain gait. Progressive weakness of the legs, anaesthesia, loss of the sense of position, severe derangement of coordination.

On admission classical appearance of severe tabetic ataxia. Romberg positive.

Loss of the sense of position and of feeling of passive movement in the lower extremities. Knee jerks exaggerated. Complete anaesthesia of the lower extremities to the height of the knee terminating ring-like. From there up general hypaesthesia, especially algetic, except hyperaesthetic zones over the hips, the upper dorsal vertebra and beneath the left mamma. Pharyngeal of reflex wanting. Left hyposmia, keenness of vision blunted. No lacerating pains, no crises, no eye symptoms. Slight detrusor weakness. Patient was at first considered as tabetic.

CASE IX.

Pitres (*Archives de Neurologie*, May, 1888).

Man, 40, untainted, free from lues and alcoholism. In 1877 lacerating pains appeared, in 1880 girdle pain, uncertain gait, feeling of swelling in the feet, sexual excitement followed by frigidity. Romberg's symptom. Until 1886 bladder trouble, rectal tenesmus, gastric crises, clonic lacerating pains, locomotor ataxia. Deep reflexes retained, no eye symptons. Diagnosis: tabes. Died of pleuritis. Autopsy showed posterior columns, posterior roots and periplieral nerves intact macroscopically and microscopically.

CASE X.

Higier (*Wiener klin. Wochenschrift* 1895. 1, 2, 3.)

R., 15, admitted October 17th, 1892, apparently untainted, had been ill a year ago in the same way for nine weeks.

For six weeks weakness, numbness of the legs, difficulty in standing, inability to walk (astasia and abasia) with crossing and knocking together of the legs in varoequinus position. Romberg. In recumbent posture muscle strength good. All individual movements retained, some

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ataxia. Retarded pain conduction. Plantar reflex retained, patellar wanting. Cranial nerves and upper extremities intact. Hypalgesia and thermic hypaesthesia in lower extremities, lacerating pains, girdle sensation at the height of the navel. Lowered and retained faradocutaneous sensibility. After a few days retarded sensation the trace of ataxia in the upper extremities. Sense of position in toes and ankles deranged.

Improvement from November 30th—disappearance of pains, ataxia, disordered sensibility, return of ability to walk. "Ovarian tenderness" duplex. Concentric contraction of the visual field. Discharged recovered January 17th 1893, yet patellar reflex absent.

Analogous cases by Pitres (Gaz. Med. de Paris, 1890, Sept. 20th, in a man) by Mader (Wien. Med. Presse 1885, p. 143, woman, diagnosis: myelitis, spontaneous recovery), by Grasset and Apollinaris (Gaz. hebdomad. 1878, No. 8) man, erroneously considered a tabetic by Raymond and Vulpian (Thèse de Michaut, Paris, of a man).

The following four cases have been published by me in the *Deutschen Archiv* for klinische Medicin IX., 1871, as cases of tabes cured or improved by galvanic treatment. I present them here, in part to correct my error at that time—it is a matter of hysterical cases, not tabetic, but certainly functional, in part to show the uncertain standpoint of diagnosis at that time, for Argyll Robertson's sign was not clear as to its significance, Westphal's unknown and the opthalmoscope still unfamiliar.

All cases of tabes alleged to be cured deserve an analogous criticism, with respect to which Romberg's sad prognosis might only be too true.

CASE XI.

Mrs. F., 24, without hereditary predisposition to neuroses, delicate from childhood, menstruated at 16, dysmenorrheic since her first pregnancy three years ago, was delivered the second time April 19th, 1868. About the eighth day of the puerpurium, boring, gnawing pains in the lower extremities appeared, particularly in the right leg, which soon showed themselves in the right arm, neck and

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back, disturbed the night's rest, disappeared after a few days, but returned every three to four weeks in like intensity. Annoying girdle sensations about the waist, formication and fussy feeling in the extremities were associated. The hands became weak, tremulous and somewhat uncertain. At times she saw things as through a thick veil, now and then the objects were double. For about six months locomotor disorders have been associated—the gait became uncertain, less persistent, she even stumbled on a level floor, complained of an annoying feeling of tension about the knees, swayed greatly in turning and was nearly unable to get about the house in the dark.

Condition May 13th, 1870: medium sized, graceful figure. In forced looking to the left and outward double vision occurred, in all other directions objects were seen singly. The left eye amblyopic and only able to count fingers. Spinous processes of the dorsal and lumbar vertebrae sensitive to pressure. The movements of the right upper extremity somewhat uncertain, of little persistency. Pain, temperature and tactile sense blunted on the right, with good localization, on the left motum as well as sensum normal.

The same differences with respect to the sensibility between the right and left are found in the lower extremities. While it is nearly normal on the left, analgesia and loss of tactile sense exist on the right to the middle of the foot; in the middle of the planto pedis analgesia is found, but tactile sensation and toward the heel pain and tactile sensations are perceived equally. Reflex movements are not excited from the right planta pedis, while they are normal on the left. On the right passive movements are not felt at the ankle, active movements are also difficult with eyes closed and are not distinctly conscious. The gait is on a broad base, clumsy, uncertain. Marked swaying occurs in standing and turning with the heels together. If the eyes are covered the patient threatens to fall at once. She soon tires in walking, but still can walk for a half hour. Unable to mount a chair unaided, going up stairs very fatiguing.

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Exploration of the genitals revealed a negative condition. The patient, who at first took too warm baths and thus had felt more uncertain and weak, now receives thermal bath of 25° R. daily and was treated with stable spinal and labile spinal peroneal currents.

After a few days subjective improvement appeared. On May 22nd, after the seventh sitting, I found the gait steadier, more persistent; she could stand with eyes covered and take a few steps. Pain and tactile sense had returned everywhere in the right upper and lower extremities, but still greatly blunted, reflex not to be elicited from the sole of the right foot. The abducens paresis had disappeared without direct treatment, so that in accomodation for very near objects double vision no longer occurred. The amblyopia of the left eye improved so that the patient could read large print.

After 13 more sittings (June 13th) neither I nor Dr. Wilhelmi, who treated the patient with me, was able to perceive any symptoms of the former trouble. One day unknown to us the patient ascended a mountain 6,000 feet high without being especially fatigued, mounted chairs readily, walked perfectly steady with eyes covered and did not show the least derangement of coordination in her movements. Sensibility had returned to the norm. for all qualities on the right, the reflex excitability complete in the right leg. The recovery has remained perfect for fifteen months.

CASE XII.

Mr. J. Captain, 40, without hereditary predisposition, of strong physique, had undergone the hardships of the war with France, been frequently chilled and saturated on marches and in bivouac, and in the battle at Nuits on December 18th, 1870, received a severe wound in the left elbow. While in the invalid camp annoying insomnia and obstinate constipation occurred. When he could leave his bed in the middle of March, 1871, he noticed a fuzzy feeling in the lower extremities and the right hand, formication, uncertainty in walking and temporary twitching in several groups of the leg muscles with spinal reflex excit-

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ability essentially exaggerated at the same time; so the patient was often greatly startled by slight cause. After a few weeks paresis of the detrusor urinea was associated with a paroxysmal annoying desire to urinate. The movements of the hands had become uncertain and tremulous two months before, fourteen days ago amblyopia and paroxysmal diplopia appeared.

Condition May 16th, 1871: left abducens paresis; both optical discs markedly suffused, the inner border of the left somewhat effaced. The right eye slightly amblyopic, the left markedly so. In looking at a distance diplopia now and then occurred, which is constant in accommodation for near objects. The double images disappear accordingly as the objects are pushed to the side of the affected eye, beyond the middle line the patient sees singly. Slight degree of ataxia in the hands, besides annoying sensations of fuzziness, without actual disorders of sensation being demonstrable. In the lower extremities, with retained muscular strength, pronounced disorders of coordination, gait on a broad base, uncertain with spring-halt, marked swaying in turning. Romberg's test negative, anomalies of sensibility are not demonstrable. Patient mounts a chair only with difficulty and marked swaying, tires quickly in walking. He always felt very fatigued and more uncertain after thermal baths of 29° R., given for a few days, therefore these were discontinued. I treated the patient with the strongest galvanic currents possible, stable, regardless of the current's direction, daily for five minutes over the spinal column, one electrode being applied as high in the neck as possible on account of the eye symptoms. This was combined with local galvanic stimulation of the paretic external rectus muscle. After the second sitting I found to my satisfaction and surprise gait and vision improved. Diplopia now only occurred in accommodation for very near objects and in forced looking to the left, also the double images about two to three feet away, before the sitting were always approximated after to one-half foot. After about five sittings the patient could read the finest print. But while the feeling of fuzziness, as well as the locomotor

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disorders completely disappeared, a complete relief of paralysis of the eye muscles was in no way affected. As the patient had to be discharged on June 11th, after the twenty-first sitting, a slight degree of amblyopia and paresis of the external rectus existed in the left eye. The spinal reflex excitability was increased, the locomotor functions were perfectly normal. The same treatment was continued for four weeks by Dr. Maier at Karlsruhe, but without a further improvement in the eye trouble being attained. At the end of June uncertain gait again appeared temporarily. Patient now went to Switzerland for a vacation. I saw him again early in October, completely recovered, able to take the longest mountain tramps and for several weeks entirely free from the least traces of his abducens paresis.

CASE XIII.

Justine L., 26, single, without inherited predisposition to neuroses, formerly well, had a severe febrile disease about thirteen, from which she did not fully recover. During the two years following she had many hysterical troubles, spent the greater part of this time in bed and lost considerable strength from nervous vomiting. At about sixteen (damp, unhealthy residence as cause?) the present disease developed. She has a swaying, uncertain gait, can no longer walk in the dark and now and then has a mist before the eyes. The menses appeared at seventeen, without any change in the condition. In the years following a slow increase in the disorder of gait, frequent feeling of cold and numbness in the legs. From twenty to twenty-five the condition remained essentially unchanged. When obliged to she could walk on the street alone, but often fell. Ascending stairs was especially difficult. In walking she was often obliged to increase her pace. Improvement at a bathing resort in Baden (thirty-three tub-baths) in the summer of 1868.

Condition June 26th, 1869: strong, thick-set person well nourished. Except obstinate constipation, all vegetative functions unimpaired. Moderate degree of nystagmus of both bulbi, insufficiency of the left external rectus·

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amblyopia of the left eye. Movements of the fingers betray a slight degree of ataxia. The gait is very uncertain; short steps, often forced to stand on the heels, cannot walk in a straight line, marked swaying in turning. With eyes covered the patient at once falls. Going up stairs very difficult, walking for half an hour possible, but very fatiguing. Sensibility in no way impaired. With continuation of the thermal baths, treatment by the galvanic current to the spinal column was tried. After a few sittings the patient was able to stand and take a few steps with eyes covered. The certainty and persistence in walking gained perceptibly. Every sitting marked a further improvement; the treatment had to be discontinued for a few days owing to the menses, when an exacerbation at once appeared. After thirty-two sittings the treatment had to be stopped. The eye derangements were a little improved, the locomotor troubles essentially. Patient could walk about the room with the eyes covered and from one-half to two hours on the street without being especially tired, mounted a chair readily and could go up and down stairs quite well.

On May 23rd, 1870, the patient came under treatment again. The improved condition had been maintained, except for a few variations; patient had been able to look after the most diverse household duties. No further improvement from twenty-five more sittings in the summer of 1870.

The winter of 1870-71 passed off well, patient could walk securely on icy ground. In May I found her in the same improved condition as when discharged; the gait was steady, maintained, only now and then she had no control over its tempo; swayed somewhat in turning with feet together and occasionally stood on the heels. Withdrawal of light by closing the eyes no longer had a deleterious effect on walking. The paraesthesia in the legs and the eye symptoms previously present had all disappeared. A further series of twenty-one sittings failed to relieve the last traces of the trouble, yet the patient on discharge was perfectly able to work and support herself.

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CASE XIV.

Leopold M., 26, butcher, formerly well, of regular mode of life, without hereditary predisposition, came under my treatment in July, 1871 for progressive disorders of movement in the lower extremities, which had appeared a year ago. As cause of the trouble was stated with great probability the extremely damp and unhealthy house the patient had heretofore lived in.

The trouble began with increasing uncertainty, feeling of weakness, formication, fuzziness and numbness in the legs, particularly the left. Lightening, boring pains in the lower extremities often occurred. The patient had often fallen in the dark, going upstairs and turning around became ever more difficult, walking so fatiguing and unsteady that he was obliged to remain in the house, where he walked about the room with a cane. When I saw him the first time in January 1871, he presented the picture of an advanced motor ataxia confined to the lower extremities, with extreme intensification of the disorder as soon as the eyes were closed. Bladder and rectum were intact, likewise there were no complications on the part of the cranial nerves. As treatment with the constant current was not practical, I advised cold frictions, by which a slight improvement was effected; nitrate of silver, of which the patient had received 5. 2 grams during the last four months, effected no further improvement.

On July 26th the patient came to me again for "a final trial of electricity."

Patient is slender, of strong build, somewhat anemic. The ataxia is confined to the lower extremities, but marked; locomotion difficult, scarcely possible for five feet and only with a cane. Marked swaying at once occurs with eyes closed. The gait is slow, shuffling, patient is unable to keep on a straight line.

Feeling of annoying muscular tension in the calves as though the tendons were too short, occasionally lightening, boring pains in the sciatic nerves, particularly on a change in the weather; feeling of cold, fuzziness and formication. Tactile sensation is abolished over the whole distribution of

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the external branch of the right peroneal nerve with pain sense retained; tactile and pain sense greatly blunted over the distribution of the external plantar nerve, the localization of impressions much deranged; the other sensory functions are intact. While reflex movements cannot be excited from the right planta pedis, the reflex excitability is decidedly increased on the left, so that cutaneous irritation of the sole of the left foot for half a minute produces clonic spasms in the leg. The individual movements in the lower extremities are unimpaired; there is no paresis, the full muscular strength is everywhere present.

The treatment consisted in the daily applications of the strongest possible constant current over the spinal column and in cathodal stimulation of the right peroneal nerve. A favorable effect in the way of greater certainty and persistency of the locomotor functions was to be recognized objectively after the fourth sitting. It was distinctly shown that the direction of the current was wholly indifferent for the curative effect. Until the beginning of September the patient was given the treatment stated daily, which he was compelled to give up, owing to family relations. The result of the treatment on discharge was as follows: the paraesthesia and anæsthesia have completely disappeared, the attacks of pain have not returned for four weeks. Patient no longer sways with eyes covered, walks about the room more steadily. The feeling of complete strength, certainty and persistency has returned to the legs. Walks of one-half hour's duration are possible and not fatiguing. Only on uneven floor and in going upstairs still shows a trace of uncertainty, but which is only noticeable to an experienced eye.

At the end of October inquiries elicited the information that the state of improvement bordering on recovery has been maintained, patient feels perfectly well and wholly able to resume his arduous business as butcher.

The confusion of the hysterical imitation of tabes with the genuine is hardly possible today, after thorough examination of the case. But that the present condition cannot always afford perfect certainty, is shown by a case of a

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man reported by Petit, who for six years had had ataxia and other tabetic symptoms, was diagnosed tabes by six Parisian experts, yet one day while praying ardently at Lourdes, suddenly recovered. It must be admitted that hyseria may imitate almost all the functional derangements of tabes, even lacerating pains, paralysis of the eye muscles, bladder trouble, gastric crises and classical locomotor ataxia. But it has not presented optic atrophy, reflex pupil fixity, certain trophic disorders of tabes (arthropathies, decubitus, etc.). It seems to me improbable that it may present loss of the patellar reflex, although it must be admitted that it has been constated by eminent observers (Cases 5, 6, 10).

The possibility of an error or complication always exists in such cases.

As difficulties will only arise in diagnosis, when the anamnesis is not clear, the present condition will be decisive and the classical symptoms of tabes are not demonstrable at the time. Under all circumstances lacerating pains, gastric crises, vesical disorders and ataxia are insufficient for diagnosis.

The practitioner with little experience should never forget that locomotor ataxia is not equivalent to tabes. Whereas it is often wanting and polyneuritic ataxia(especially postdiphtheric and alcoholic) is often confused with the fatal spinal disease.

In doubtful cases the etiology is to be taken into account: An acute ataxia occurring after psychical trauma in a young woman points decidedly to hysterical pseudotabes. If the contest with regard to the luetic basis of tabes is still undecided, the exclusion of hereditary or acquired syphilis renders the assumption of tabes extremely questionable, by the positive proof of lues the suspicion of tabes is strengthened.

In a number of cases of hysterical pseudotabes the onset of the disease was acute. Genuine tabes is always insidious in its beginning.

If it is attempted to subject several of the symptoms common to tabes and hysteria to finer differentiation, the

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regional anaesthesia is to be first considered. Oulmont (Soc. de biologie 1877, Feby. 17th) found it generally symmetrical in tabes, at certain places (cheeks, sternum, naval, ulnar region, fingers, knees, malleoli, heels, plantar surfaces, toes) and of irregular distribution, while the hysterical are represented by asymmetrical and geometrical figures. These statements are often met with, but further observations are needed to be able to offer diagnostic certainty.

That the paroxysms of pain in hysteria spare the ulnar region, as Souqoues finds, I cannot confirm by my own experience.

The dysuria in pseudotabes might always be due to sphincter spasm (the catheter is introduced with difficulty and held on withdrawal), while that of tabes depends on detrusor weakness.

The ataxia of hysteria is extremely changeable, very especially by psychical influence. This is true also of Romberg's symptom, in so far as it is not due to loss of the deep sensibility.

A symptom common to both diseases is the sudden failure of the legs, even to continued paralysis under certain circumstances. This symptom also needs comparative study. In hysteria it seems to me it is always to be regarded in the sense of a temporary astasia, while in tabes it represents a real or total insufficiency of the lower extremities.

With respect to the eye symptoms, in tabes it is a matter of the paralysis of isolated muscles due to nuclear or peripheral nerve affections, which may occur many times in the same eye, whereas the hysteria usually of associated paralysis or of simulation of paralysis by spasm of antagonists; the contraction of the visual field in the tabetic is more irregular, in hysteria strictly concentric. The achromatopsia in the latter is equivalent to the degree of contraction of the visual field and, as a consequence, the perception of red is retained the longest, while green and red blindness is one of the earliest symptoms of tabetic amaurosis.

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

By DR. C. WERNICKE,

Professor in Breslau.†

LECTURE TWENTY-TWO.

Further as to supraquantivalent ideas—Theory of illusions—Their conformable content—Conformable content of false sensations generally.

WE had previously considered as the basis of the supraquantivalent idea the frequent repetition, possibly intentional practice of definite trains of thought, a process, which must be recognized as of the greatest influence in the education of an individual, for which of late the apt expression of preparing the way has been employed. This conception requires broadening in so far as the preparing the way, will in general go hand in hand with an affective coloring of the idea. Thus occupation is very especially suited to produce a supraquantivalence of certain ideas, but at the same time their affective color is expressed, in that momentarily the person's preponderating interest is turned to his occupation. We observed the remarkable fact that the susceptibility to certain definite perceptions is thus remarkable increased. To select the most pertinent example, any disorder or neglect on the part of the attendants is at once noticed by the experienced alienist on his rounds through the hospital, his attention and his interest is turned to it without a conscious effort being required; what we call discretion in any

*Continued from *Alienist and Neurologist*, Vol. xxxiii, No. 4.
†English by W. Alfred McCorn.

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business affair has this foundation. Likewise the plastic artist considers the form, the tailor inspects the attire, the shoemaker the boots and unmarried girls notice the ring on the fingers of men. The increased excitability for certain sensory stimuli is shown to be dependent on the increased quantivalence of certain complex psychical processes. If under certain conditions an event of such common occurrence as *e. g.* the apple falls from the tree, has attracted the attention of a Newton, it is not an accident, but depends on the increased interest, which is due in part to certain ideas prevailing at the time, even in an event previously indifferent. It is similar with all inventions and discoveries, in so far as they are combined with daily observations. How partial this faculty for the reception of certain sensory impressions may be in the prevalence of certain ideas and their affective color is shown by the example of the mother, who in deep sleep is oblivious to every noise, except the least move on the part of her child. We will call this occurrence partial intrapsychical hypermetamorphosis. We may consider such an affective color and thus induced supraquantivalence of ideas the most common basis of illusions.

The theory of illusions is in great part based on the experience from the sense of sight, and the best known example is the interpretation of indistinct and vague visual impressions in a terrifying, fanciful manner, *e. g.* the distant tree stumps as robbers, the flapping washing as ghosts, etc. Evidently these are errors of judgment, *i. e.* clouding of judgment by affects like fear or anxiety. We purposely differentiate a distinct and an indistinct perception. The clouding of judgment in the latter case may so act, as in the examples of visual illusions cited, and the affect will have to be considered the cause of the illusions. But it is asked, by what process does the affect have this influence? As we have seen, we must ascribe to the affect the attribute of so changing the normal quantivalence of ideas that certain ones become supraquantivalent, others infraquantivalent in comparison. Supraquantivalent ideas have the attribute of being excited peripherally more

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readily, the infraquantivalent more difficultly than normally. The supraquantivalence of the affective ideas of robbers and spirits then in our example pathologically facilitate secondary identification, the infraquantivalent interfere with the memory pictures in other senses or correcture in the same sense.

The affect may be of another nature or some association process of an individual sort may cause a supraquantivalence of ideas, which has exactly the same effect. I know of the instance of a young married man, who on a business trip to another city made the acquaintance of a lady and went with her to a place of amusement. It then occurred to him his wife had relatives here and that by a combination of improbable, but still possible conditions, she might suddenly conclude to visit the city and also come to the same resort. He inspected the company present and was soon so firmly convinced of recognizing his wife in a lady not far away, that he did not dare insure himself of its truth by going nearer, but decided to leave the place. I know of scarcely another example, which could so suitably illustrate the preparing influence of single affectively colored and thus supraquantivalent ideas for secondary identification in the normal person. If we think the affect increased only a little and the mental state thus clouded, and affective state, which we may assume in many recent cases brought to the Clinic against their will, a series of illusions thus become at once comprehensible, which we frequently encounter under these conditions. Related supraquantivalent ideas here are a separation from the relatives and the force used in bringing the patient. It is then not strange if relatives are believed to be recognized in persons at a distance and not distinctly seen, the State's attorney in the physician, a prison in the Clinic. Such illusions are frequently met with in many acute mental diseases. They are characterized in general by their instability and ready correcture. In very severe cases a certain confusion, an evident lack of attention may be added, so that the condition of an imperfect perception is replaced by a defective state of the sensorium. Then, so long as this

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condition exists, numerous illusions occur, but all of which have in common that they change in content according to the ordinarily rapid change in the supraquantivalent ideas. Delirious states of the most diverse origin offer pertinent examples. It is not accident that the alcoholic deliriant believes he is among his companions, at the saloon or engaged in his daily occupation, thinks he recognizes in the physician his cabman or cronie: these illusions correspond to his supraquantivalent ideas. Under these conditions a good patriot considers the supervisor the Emperor, and if the delirum is of an anxious nature, executioner and State's attorney are illusioned. Inaccuracy of perceptions, which must favor the occurrence of illusions, will have to be accepted as existing so long as the patient is resigned and evidently in a dazed condition, so-called (Dämmerzutand). The same preliminary condition will lead to corresponding illusions in states of hysterical, epileptic or so-called exhaustion delirium.

The occurrence of illusions is harder to understand in apparently complete mental possession, attentive condition and sufficiently distinct perception. But in this case the content of the illusion is usually determined by certain effective ideas. Then ordinarily some exact sign may be ascertained, which the patient has utilized for his false identification. Thus it often occurs that an insane person considers the physician, attendant or some other patient a near relative, because he discovers some actual similarity, *e. g.* in the facial expression, the form, gait and sound of the voice. This mistaking of persons seems to be stable and is hard to correct. In a case of stabile mistaking of persons cited by Kahlbaum, on the same basis I presume, the illusion was so fixed that the patient failed to recognize his real relative and called him a swindler, an experience not so rare among insane after a long detention in the institution. It is certainly not an accident, but perhaps the longing for the relatives induced by the hospital detention, which is the cause of this misconception. Evidently the pathological process consists in concept of the relative, possibly the brother, being so supraquantivalent that the par-

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tial identification of the actually similar tone of voice has the same effect as the blunted sensorium in the cases previously mentioned. Normally the difference in form, size, features and facial expression should prevent the identification.

Does not here exist, you will ask, a defect, a weakness of reproduction in those component ideas belonging to the concept of the brother, which relate to the form, size, cast of countenance and facial expression? A weakness of the cortical function according to Meynert, of criticism as Neumann calls it? This assumption is entirely superfluous, if you will call to mind the attributes of the supraquantivalent ideas above given. As we have seen in the case of hallucinations, the pathological supraquantivalence of ideas alone suffices to produce a process of identification, how much more must this be the case when an actual, if only partial primary identification aids in this inner process! Thus is shown the inner fixity of the once acquired concept, now become supraquantivalent: brother. Hence it can not be denied that under certain conditions this weakness of reproduction, even a paucity of concrete concepts for certain component ideas may be present in an insane person, as *e. g.* in paretics and senile dements, who may declare straw to be gold owing to its yellow color, bits of glass diamonds from their hardness and transparency. But then this paucity of the concept may be demonstrable elsewhere and this is in no way the case in the previously mentioned acute insane. You see that in the conception of the illusions, at which we have arrived, the difference between distinct and indistinct sense perceptions, that first seemed so important and essential, loses its significance, just as the principal difference between illusion and hallucination disappears. The illusion now seems to us like hallucination, whose appearance is facilitated by incidental external conditions, a conception to which intelligent older authors, like Kahlbaum, had come long ago. We will surely admit this proposition only for the illusions of the insane and for descriptive, practical purposes hold strictly to the distinction between illusion and hallucination among

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the patients of our Clinic. The same reflection will lead us to conclude theoretically no other position for the previously mentioned hallucinations of evident peripheral origin, *i. e.* in the sense organ, Kahlbaum's phenacisms, like the hallucinations from purely central cause. Such phenacisms play a great part especially in the matter of taste and smell, in that the bad taste from buccal catarrh, the bad odor from nasal catarrh is misinterpreted as poison. Here also, as we will see later, a supraquantivalent allopsychical idea of anxiety is the cardinal cause.

From the conditions mentioned it becomes in a certain measure comprehensible why in the frequency of hallucinations they conform to law, so that phonemes largely predominate and often exist alone. This is true particularly of many chronic mental diseases. In the acute it is often observed that at first only phenomes occur and the accession of hallucinations of other senses correspond to a recognizable aggravation of the symptoms to a certain intensity of disease. It is readily understood that in the close connection between ideation and sensorial speech fields a higher degree of irradiation of the stimulation is essential to radiate to the projection fields of the other senses, that is that which results in hallucinations or word sounds. I know that the opinion is common, particularly from the writings of Charcot and his pupils, that the process of thought takes place in an individually different manner, which far surpasses the measure of individual variations admitted by me, so that ostensibly many persons think only or largely in optical word pictures, others in acoustic, others again in the motor. Without contesting this, I suppose it is for very rare, exceptional cases and therefore not permissible to use it in the theory of hallucinations. That next in frequency phonemes, hallucinations of taste and smell are observed, in the acute mental diseases at least, is explained by the fact that it is here usually a matter of phenacisms and these naturally must occur more readily than the real hallucinations.

Now after I have evolved a definite theory for the false sensations of mental diseases, I am in position to

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briefly discuss their conformity of content, as I have repeatedly stated, on the basis of a few examples. The law here concerned is, that the content of false sensations is determined by the prevailing affective state. The affective state and consequently supraquantivalent ideas are now the most excitable, and not only for the stimuli conducted from the sense organs, as we have previously seen, but also for the central pathological stimuli associated with the sejunction process. To begin with something familiar* I refer to the occurrence of a hypochondriacal feeling of well being. Accordingly in such cases supraquantivalent ideas occur, which give expression to the feeling of well being ,and the corresponding phonemes have the content of delusions of grandeur. A pathological euphoria we will become acquainted with in mania. If it here results in hallucinations, they are hallucinated ideas of grandeur. Inversely in melancholia the affect is one of profound dejection. Accordingly the content of the phonemes, if present, is usually that of micromania. The more frequent visions are in form of ideas of dejection. The psychosis of apprehension has been repeatedly mentioned in the paranoiac states. The affect of anxiety leads in full conformity to law to definite ideas of anxiety, which I differentiate as autopsychical, allopsychical and somatopsychical. Of these the autopsychical are in part identical with the micromania of the melancholic, then self-accusations or, if in a phonemes, accusations and insults. The allopsychical ideas of anxiety have the content of threats and derogation. Accordingly the patients hear they will be killed, tortured, burned, given to wild animals, driven out into the snow or naked through the streets, etc. It is due to somatopsychical ideas of anxiety, when a patient hears her globus interpreted by a voice to be a cancer of the larnyx, a bronchial irritation a sure sign of consumption, cold extremities the approach of death.

The most common and general state of affect met with in recent cases is that of perplexity, produced by a certain moderate degree of disorientation. The most frequent content of the phonemes corresponds to it. The pa-

*Alienist and Neurologist, See Vol. XXI, p. 314.

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tient's assertions are highly characteristic: Where am I—what shall I do—what is the matter with me—I do not know anything, and similar disconnected exclamations are heard again and again. If the patients hear libelous names and insults, reproaches for imaginary misdeeds, hints of events that have never occurred, it is the result of autopsychical perplexity. It is often possible to conclude a posteriori such content of the patient's phonemes from their assertions and with perfect certainty, for they permit no other interpretation. I cite *e. g.* the following: I am no thief, I have poisoned no one, I have killed no children, etc. When the patient's identity is contested by the voices, it leads to assertions like *e. g:* my name is so and so. I am not a princess, am not married, have no children, these being evident reactions to the affect of autopsychical perplexity. Allopsychical perplexity is expressed in phonemes referring to the place and surroundings. The patients hear they are in prison, in heaven, in an enchanted castle, on a ship, etc., that the fellow patients are disguised and belong to the other sex, or disguised police, that the bed is not an ordinary one, the bath tub an instrument of torture, the food contains disgusting things or human flesh, etc. Phonemes like the following are produced by somatopsychical perplexity: that the rectum is grown up, the body full of feces or changed into a solid mass, the heart has stopped, the blood does not circulate, that the patients are paralyzed or dead, that the head is separated from the body or changed into an ape's, that the arms are pulled out or many times longer than formerly, or instead of two arms there are five, etc. Motor perplexity is very often clad in phonemes. This is the most evident when the patients hear perfectly contradictory commands, *e. g.* eat and do not eat. Also the command to take a certain position, to keep the tongue far protruded, to walk on all fours like an animal, are hallucinated assertions of motor perplexity, and also when the patients hear that they can not swallow, speak, touch the hand. Finally a great part of the so-called impulsive actions, but in reality caused by phonemes, have to be explained in this way. The patients hear the

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command to escape, jump out of the window, throw themselves into the water, hang themselves, throw themselves on their head, pull out their tongue, mutilate the genitals, gouge out the eyes.

I limit myself to these examples, which I believe are sufficient evidence to show the dependence of the content of phonemes on the affects most frequent in acute mental diseases. I would only have to add, that in a certain respect the delusion of relativity depends on the affect state and refer as to this to my remarks in the thirteenth lecture. If these chiefly relate to the delusion of relativity in the baroniac states, it is at once comprehensible that in the acute psychosis the delusion of relativity has a still greater affective color. It is especially the satisfaction of the demands of Nature in taking food, relieving the bowels and bladder, which in the acute psychoses cause the occurrence of phonemes with the content of the delusion of relativity, and especially frequent of disorientating phonemes, which are clad in the tone of voice of the person chiefly concerned, then of the attendants or physician. Taunts and twitting remarks naturally predominate, as *e. g.*: "now he eats again," or: "he can eat well, but not work."

It is very probable that not only the phonemes, but all hallucinations show the conformable dependence on the prevailing affect which we have become acquainted with in the phonemes. Still our experience greatly needs completion. It is the best known of visions that their content depends on the prevailing affect and that applies especially to melancholia and the psychosis of apprehension. Corresponding to the prevailing dejection corpses, coffins, uncanny black forms, funerals or in more fantastically colored cases the destruction of relatives by falling buildings, by flood, by railway accident, etc., are hallucinated; usually at least in more shadowy form with the support of this standpoint it is a matter of visions. That the visions of the ecstatic corresponding to their religious feeling of happiness, relate to heaven, and that it is here often more a matter of dream-like hallucinations than of visions, is readily comprehensible after what has been said.

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LECTURE TWENTY-THREE.

Presentation of a Case of Psychosis with Apprehension. Form of the Disease, Course, Diagnosis, Prognosis, Treatment. Separation from the Neuroses with Apprehension. An Example of Psychosis with Hypochondriacal Apprehension.

The patient Sch., whom we have here, has objected to coming to the auditorium. He looks about anxiously, slowly comes nearer, but then greets me as an acquaintance. We have a man of 55, large, vigorous physique, in a state of lowered nutrition, with somewhat cyanotic color of the face and hands, cold extremities, anxious in manner and facial expression. A low moan is repeated rhythmically and now and then interrupts his talk, while he shows a great desire to speak. He looks grieved when I interrupt him to make explanations. He answers correctly my questions as to age, domestic relations, his home, business, but it is noticeable that his affects make it hard for him to concentrate himself, that he pauses, when he looks about vacantly, and that therefore the answer to simple questions, which otherwise is prompt, often requires a longer time. Patient repeatedly admits that it is hard for him to collect himself. The impression we gain of the affect controlling the patient is that of confusion, anxiety and perplexity. That these states of affect render difficult a coordinated train of thought has long been known and repeatedly demonstrated. On inquiry we learn that the patient complains of constant anxiety. Seat of the anxiety in his heart: "it will crush him". He can not breathe and therefore has not slept at night. Consequently he wishes me to examine him and prepares to undress in his anxious, hasty way. To the question why he is so anxious, he says the fear of being beheaded; he has also heard he shall count fifty daily, he is presumed to eat biscuits which have been in an expectoration cup of another patient. On inquiry we hear that the other patients, who are in the same room with

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him, have made these assertions. The patient is well orientated and knows he is at the Clinic for insane. Still he does not thoroughly comprehend the present situation, so it might be that the patient has previously had somewhat limited conceptions, as we frequently find in the country people of this region. He recognizes me, recognizes the audience to be students and thinks I give them instruction, but still believes the gentlemen will all become preachers like his son, who is a student of theology and accompanied him to the Clinic. In the ward the patient has claimed they will cut off his head, he will be taken to the morgue where the corpses are. Besides it is not merely the fear of the threats which control the patient, we hear many complaints as to the fate of his family. He believes he has lost all he has; his son will be unable to study any longer. He has heard the voice of his little son say: "we have had nothing fit to eat for three weeks," the patient has also seen his son standing before him with supplicating gestures. Patient believes his family must die of hunger. The children are all sick, his son, the student, has been refused by a life insurance company owing to a heart trouble. He is to blame, he has ruined himself by an immoral life and secret sins in his youth. He has been too corrupt. He has also injured himself by chewing too much tobacco. Patient tells of an assault in which he recognized one of the assailants and has made a complaint. He then probably perjured himself, for it had been in the night and he could not have seen plainly enough. Formerly, when the anxiety was still greater, the patient had complained that both his younger children had been poisoned, had taken the life of his wife. At this time the patient, who has a hernia, had eaten poorly and claimed he had pains in his abdomen from eating.

Except the hernia no organic disease is to be found, he looks in no way older, but younger than he is. The patient has now been at the Clinic something over a month and sick for about three months before. The external cause of his disease was said to be that the patient, owner of a blacksmith shop and a farm adjoining, sold this

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property and the shop to put himself at rest. Although the business was profitable and went smoothly, the patient gradually got the idea he had ruined his family and became poor. Anxiety, self-reproaches, which referred to the fancied perjury and the idea he is a great sinner and persecuted by Satan, were gradually associated. These ideas of autopsychical anxiety existed alone in the early part of the disease, and shortly before admission those of the fanciful menace were added, simultaneously such an aggravation of the anxious restlessness (anxious motor impulse) was noticeable that commitment of the patient to an insane hospital was unavoidable. Here the patient seems to have attained the crisis of his disease and now to have passed it. This is indicated by the subsidence of the ideas of somatopsychical anxiety. Besides a manifestation, the patient's rhythmical moaning, which is now only intimated, was much more pronounced in the early part of his sojourn and at times was increased to a monotonous repetition of one and the same phrase (I poor sinner). This was sometimes accompanied by rhythmical movements of the arms. The anxiety seems to have reached its highest point about this time. Nutrition was impaired only at the time the ideas of somatopsychical anxiety occurred, sleep must usually be induced by hypnotics. His weight fell from 78 kg. at the time of his admission to 72 kg., its present condition, while the amount of food taken has usually been sufficient.

With regard to the prognosis we are justified in calling it favorable on the basis of the course and other data. The course is seen to be of acute onset, then an exaggeration of the symptoms for a period of about a week, during which parakinetic and hyperkinetic symptoms in form of verbigeration and rhythmical movements of the arms occurred. This period corresponded to the height of the anxiety and the occurrence of ideas of somatopsychical anxiety. Since then the independent motor as well as the hypochondriacal symptoms have ceased and the anxiety lessened in intensity. Delusions of relativity and disorientating phonemes of corresponding content are not intense. Thus the intensity of the fundamental phenomenon, the anxiety, accords with the

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extent of the symptoms; the disappearance of the symptoms is to be expected in similar order.*

The form of disease described is typical of a large series of analogous cases, only a few slight deviations must be excepted, which prevent the case from appearing perfectly pure. Perhaps it is a matter of the peculiarity of the individual, as I intimated. In general it can not be denied that the elementary symptom of anxiety affords the exclusive basis of a type of disease, which in many instances presents no other symptoms than those to be traced to the anxiety. We can put all these cases under the term *psychosis with apprehension*. The fundamental symptom is the anxiety, which is most often located in the breast, especially in the heart and epigastrium, next the in head, then in the whole body and always of a fluctuating character, intermitting at the onset or decline of the disease. This anxiety induces certain ideas, which therefore deserve the name of ideas of anxiety. They are so shaded that the ideas of autopsychical anxiety correspond to the lower intensity of the anxiety, the allopsychical and somatopsychical to the greater intensity. The somatopsychical may sometimes be absent or, as in this case, appear only at the time of the crisis of the disease. At the onset and the decline of the disease ideas of autopsychical anxiety are usually alone present. In many cases it consists wholly of ideas, far more often the ideas are clad in phonemes. At the height of the anxiety hallucinations of the other senses may occasionally occur and in certain very acute cases, as *e. g.* in the attacks of anxiety described of epileptics, combined hallucinations in all the senses. The condition is so frequent that usually only ideas of autopsychical anxiety of moderate intensity exist, or a combination of ideas of autopsychical and allopsychical anxiety, and phonemes only occur at times of increased anxiety. The allopsychical orientation is retained, the autopsychical usually altered permanently in the way of micromania. The perplexity may be extended to the allopsychical domain. Indications of delusions of relativity are often

*Three months after the demonstration the patient was actually well and has been so for two years.

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met with at times of intense anxiety, disorientating phonemes of this content also occur. The content of the ideas of autopsychical anxiety and corresponding phonemes is solicitude about the relatives, the financial condition, injury to personal honor, micromania, self-accusations, consequently insulting phonemes. The content of the ideas of allopsychical anxiety is usually that of menace to life or honor, abuses, etc. The delusions of relativity behave in the same way. Of the hallucinations associated with especially intense affect, those of taste and smell are to be mentioned in particular, because they are usually regarded as the effects of poison and induce a temporary refusal of food.

Of etiological factors, alcoholism, epilepsy, the climacteric and senility seem to be closely related to the psychosis with apprehension.

With respect to the course of the psychosis, it may last from a week to several months. The shortest course is observed in abortive cases in epileptics and alcoholics. It sometimes happens that delirium tremens is replaced by an acute psychosis with apprehension of a very affective stamp with pronounced ideas of autopsychical anxiety. The psychosis is then of correspondingly short duration and accompanied by tremor and the symptoms on the part of the projection system to be discussed later. The psychosis with apprehension quite often occurs symptomatically, especially in heart defect with deranged compensation, when its course in point of time generally depends on this condition.

A real paranoiac stage does not generally occur, except consciousness of disease may be wanting for a long time.

The patient's motor state is generally determined purely psychologically by the affect of the content of the ideas of anxiety and hallucinations. The majority of patients can usually be treated in bed, still the exaggeration of the anxiety causes a certain motor restlessness, chiefly expressive movements of anxiety like crying, sobbing, wringing the hands, kneeling, praying, according to the individuality. In many cases tremor, grinding the teeth, pro-

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fuse perspiration occur. If the anxiety is still further increased the patients get out of bed, walk about restlessly, try to get away. Motor manifestations not psychologically induced, or at least on the boundary of motor symptoms, are generally rhythmical moaning or swaying of the trunk, most often the two together, finally the monotonous, if not rhythmical, yet repeated movements of the hands, pulling at the bedding or clothing, rubbing the hands together, etc. The tendency to suicide is almost always pronounced, as well as the desire to die is often manifested in expressions like: "Put an end to me. Strike me dead." At the crisis of the disease the motor symptoms just described or those still more pronounced readily occur, particularly a parakinetic condition by rhythmical movements and verbigeration. On the other hand a state of allopsychical disorientation and an exaggeration of the sensorial symptoms to fear of everyone and blind defense.

Melancholia agitata so-called deserves to be expressly mentioned as a special form of the psychosis with apprehension. Motor restlessness is constantly very pronounced, the movements are not wholly, if largely of psychological motive, they are in part, as above described, on the boundary of real motor disorder. But it is especially striking, that the increased production of ideas of anxiety may lead to impulsive talking and flight of ideas, symptoms, which we will meet later in an entirely different form of disease, but whose sensorial derivation here is not to be mistaken. It seems to be peculiar to these cases of agitated melancholia that the ideas of autopsychical anxiety predominate largely, if the allopsychical are never entirely absent.

Diagnostically it is to be first observed, that the disease often develops further and only forms the initial stage of a more complicated form of disease. This further development occurs in two ways, namely in form of a complex motor psychosis, usually characterized by the addition of akinetic symptoms, and in form of a more diffuse sensorial psychosis with disorientation. In the latter respect a suspicion must always arise, whether disorientating phonemes and delusions of relativity are more than incidental factors in the disease type.

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The further development may be effected very quickly, so that the most acute forms of disease like those of the transitory psychoses so-called result.

For the diagnosis from affective melancholia the evidence of ideas of allopsychical anxiety or delusions of relativity is decisive. From acute hallucinosis the diagnosis is generally easy. The dominating symptoms of anxiety, according to the patient's statements, are objectively conspicuous, the frequently observed dependence of the phonemes on the variations in the anxiety, are most characteristic. But it is equally characteristic, that acute hallucinosis very early develops a paranoiac stage, which is not true of simple psychosis with apprehension. The retained allopsychical orientation distinguishes the simple psychosis with apprehension from delirium tremens tinged with fear. Likewise general sensorial psychoses are usually accompanied by disorientation. In many instances therefore the psychosis with apprehension is not to be differentiated from progressive paresis, because from the clinical standpoint the occurrence of a paretic psychosis with apprehension must be admitted. During the affect it is often hard to establish the disorder of memory, judgment and the ability to attend, almost always demonstrable in paresis, on the other hand the possibility exists that the symptoms in the projection system decisive for paresis—or alcoholism—are absent and first appear later in the course.

Cases of disease are very often met with, which may be called *borderland cases* or mixed cases of *psychosis with apprehension and affective melancholia*. They are characterized by the fact, that neither one or the other form of disease can be demonstrated pure or complete. From the external appearance the picture of affective melancholia usually predominates, especially because the fluctuations in the anxiety are less pronounced and a more continuous, stationary type of disease prevails. The subjective insufficiency of affective melancholia is often wanting, while pronounced micromania, self-accusations and other ideas of autopsychical anxiety are present. The prevailing affect is

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that of misery, but also a localized anxiety. The manifestations of anxiety are usually limited to the simplest expressive movements, like those of crying, sporadic outbreaks of despair, while a motor restlessness is generally wanting. Ideas of allopsychical anxiety are almost always demonstrable, but they are sporadic, recede greatly in their importance and must often be sought for. Likewise, wholly sporadic delusions of relativity occur. The idea of misery prevailing among those of anxiety are often confined to a circumscribed group of ideas as in pure melancholia. The phonemes are subordinate factors.

Thus the quite frequent form of disease is sufficiently characterized in both ways. It seems to occur preferably in very young persons and in old age. The diagnosis is therefore not unimportant, because the prognosis of this disease is not only to be made with more certainty than in the psychosis with apprehension, but it is by far more favorable. The cases of the kind I have known have all terminated favorably.

The *prognosis* of the psychosis with apprehension is to be called favorable, for in by far the greater majority of the cases above described recovery has occurred. This favorable opinion is modified by the difficulty in making a certain diagnosis until a greater part of the course of the disease is past. When, as in the case presented, the crisis of the disease is past, it may be assumed with some certainty that a transformation of the disease into one more complicated will not occur, and in this expectation one is sometimes deceived, for after a stage of apparent convalescence, a further development of the psychosis into a progressive course may occur. So it is *e. g.* in a case of senile psychosis with apprehension in a woman of 73, whom I could present after a course of 1½ years, as a typical example of a chronic case with hypochondriacal delusions of persecution in the stage of allopsychical disorientation*. In this case the form of disease was unfavorably colored by numerous disorientating phonemes and delusions of relativity.

*See case 1 in "*Krankenvorstellungen der Breslauer Psychiatr. Klinik*," Heft 1.

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The *treatment* of the psychosis with apprehension has the special task of combating the symptom of anxiety. To simply bear intense anxiety for a long period can not be expected of any patient, just as little as the analogous symptoms of pain. In general extract of opium, in doses of ½ to 2 dcgr. subcutaneously, is a reliable remedy. Next a combination of hyoscine with morphine, and of the first half of as many milligrams as centigrams of the latter, is of value. The dose may be daily increased from ¼ mgr: ⅓ cgr. to ½ mgr. : 1 cgr. In the paroxysms of anxiety in epileptics, a hypnotic dose of amyl hydrate internally, or by clyster, is preferable. The further treatment of the psychosis with apprehension presents no other problems than that of psychosis in general, and therefore I refer you to my remarks on this subject at the conclusion of these lectures†.

No other province of mental disease has so many points in common with the functional neuroses as that which has just received our consideration. As frequent as the psychoses with apprehension are, it is incontestible that the states of anxiety, which come within the domain of the neuroses, are generally far more frequent. The question then arises: are there certain criteria for differentiating a *neurosis with apprehension* from a psychosis with the same affect? This question is of great practical importance, for with the psychosis with apprehension it is the physician's duty to assure the patient's safety by commitment to an insane hospital, even against the patient's will. Such interference with the personal liberty of a neighbor would by no means be tolerated in a mere neurosis. Fortunately the type of disease above described presents in its complex of symptoms such certain signs readily recognized, that the positive diagnosis of a psychosis with apprehension is easy and thus a doubt as to the correct method of procedure is obviated. Still unquestionably there are here, as everywhere in Nature, borderland cases, in which doubts as to the propriety of such a vigorous measure are justified. It will then be the phy-

†The reader finds examples of psychosis with apprehension in cases 3, 8, 9 and 12 in the first part and 5, 21, 22 and 23 in the second part of the "*Krankenvorstellungen aus der psychiatrischen Klinik in Breslau*," Breslau 1899.

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sician's duty to provide for the greatest possible security and supervision of the patient in private. There is no better means for this than bed treatment, carried out strictly. But then, as above stated, the symptom of anxiety itself will have to be treated. The patient's welfare is always paramount to all other considerations and therefore the practical consequences, which the patient derives from his feeling of anxiety and the associated ideas of misery and anxiety on his action must be clearly kept in mind. Always remember that a single symptom, like anxiety, never suffices to diagnose a psychosis, but that on the other hand to the patient's actions equally as much value at least is always to be ascribed as to what he says. When suicidal attempts occur the patient's safety, by commitment to an insane hospital, is unconditionally demanded in these borderland cases.

I have begun the description of special disease types with the psychoses with apprehension, because on the one hand they are cases relatively easy to understand, on the other their points of contact with many other acute psychoses are so numerous, that they soon lead us into the midst of our practical problems. I scarcely need say that the practical knowledge of mental diseases has nothing to do with theoretical hypotheses. Therefore our method of demonstration will be essentially governed by the purpose of instruction and this subordinated to the practical requirements. The patient I now present belongs in this practical sense to the psychosis with apprehension, but, as will soon be seen, brings us to the subject of our next lecture.

The working woman L., 69, as is seen, a white haired woman, walking somewhat stooped with depressed slightly anxious facial expression and corresponding manner. She answers questions promptly, if in a somewhat feeble voice. She tells us her birthday, the date of her marriage, how long she was married, the date of her husband's death and his illness, gives the names of her children, tells us of her only living daughter and her marriage, speaks of her grandchildren. We learn from her all the prior history of her dis-

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ease. In the spring of 1896 she became ill from a tumor in the body, which was then operated on. She then spent eleven weeks in the hospital, was very weak afterward, but well otherwise. In November she had the shingles and could sleep hardly at all for three weeks. Early in December the present trouble appeared. The time of her stay at the Clinic—since February 24th of this year—she states nearly correct, shows she is thoroughly orientated as to the purpose of the institution and her fellow patients, knows that the gentlemen present are students who visit the Clinic. I present her to speak of her disease. What is her disease? She can eat nothing because her throat is grown up or, as she corrects herself, only a very little passes through. The tongue has grown to the roof of the mouth. She feels with her hand and demonstrates that the upper surface of the tongue touches the roof of the mouth. Besides she constantly has the taste of pitch in her mouth and what she eats has no taste. What she swallows with difficulty she feels sticking in her throat. It accumulates in the stomach and causes a feeling of tension. Formerly defecation has not been possible, and now only occurs through artificial means and insufficiently. I ask if she is not somewhat better, but she replies in the negative. Still I must remark that the patient has actually improved. She was formerly so weak and infirm, that she replied in a very low, feeble voice and a demonstration like to-day would have been impossible. Owing to her feeling of severe illness she then did not speak of herself at all, while she does now occasionally, and took no part in what went on about her, while she now shows some interest. She then stated that her esophagus was completely grown up and had to be fed by force, while she now takes some food spontaneously. We have further learned from her daughter, that she previously complained that she could not get her breath.

What her disease is the patient is unable to say definitely, still it is something very bad, entirely hopeless. She has formerly said it is the pest and that she feared infecting others by contact. In this respect she has surely improved, for she does not think so now.

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If we ask the patient how she likes her treatment here she replies: good, she is not worthy of it. What has she to reproach herself for? She is bad and sinful through and through, has tried to take her life, is a fright, a spectacle before persons and deserves to be thrown out. The other patients cry on her account. She has brought her sickness on herself by not eating, she has not treated her mother properly in her last illness. As a further sign of fanciful micromania I will still mention, that the patient refused to go into the reception room, because the other patients will not look at her, and has said, when preparations for photographing were being made, the photographer would be so shocked by her appearance that he would fall dead. Further the patient is convinced she cannot die, because she is too bad. She now expresses the desire to die and before her admission tried to strangle herself twice, because she could not bear it so. The patient believes her grandchildren are very sick, perhaps dead, and she formerly expressed the idea they would die on her account. As she then claimed to be to blame for all the misfortunes she heard of, *e. g.*, when an acquaintance burned his hand. She likewise expressed the fear she would not be admitted to any hospital, because she is too bad. Although the patient gives systematic information and presents no external signs of anxiety, she still admits on inquiry to have anxiety constantly. Where is the anxiety located? In the head. The anxiety is distinctly differentiated from the anxious feeling in the epigastrium, according to prior statements the anxiety was sometimes located in the breast. With respect to the patient's conduct on the ward, it is stated that she has always been affable and trusty. She has always been tidy and only occasionally disturbed; owing to her delusions she pulls at her anus or handles her excrement.

Other symptoms have not been found in the patient. Her delusions have always been confined to the pathological ideas described, to her body and her personality, and her conduct thus determined. With respect to the conception of the disease a review of its course is very instructive. It is unquestionably shown, that from the onset the present

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hypochondriacal troubles existed and that they gradually led to the patient's extreme emaciation—her weight on admission was 31 kg., hence the necessity of her admission to the Clinic.

The other pathological ideas first appeared at a certain height of the disease, after the isolated hypochondriacal complaints had existed for weeks. A test of perception and attention showed a normal condition. The information we have gotten from the patient has always been given in concise answers to the questions asked her.

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THE EROTOPATH IN SOCIETY.

By CHARLES H. HUGHES, M. D.

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EROTOMANIA has been well described, as it is seen displayed in the salons and corridors of hospitals for the insane, but it is not so well understood as it appears in the milder and less demonstrable phases of insanity in social life, without institutions for the restraint and treatment of the morbidly involved erotic powers.

A suggestion of the erotopath, (out of whose class in more or less extremely morbid form, the nymphomaniac and satyriac insane in our psychopathic hospitals are often evolved), comes into public prominence in the daily press. The newspapers, and even doctors, sometimes, are mystified and astounded at erotic revelations which have the semblance of startlingly immoral truth. In some of these instances it has been found that a morbid-minded woman, erotopathic, hysteropathic, or, it may be, cliteropathic, has made much real mischief in a community by conduct born of associated emotional erotopathy.

Sometimes the cause of the trouble grows out of grave, confirmed insanity with salacious illusion, hallucination and delusion.

Often, of course, erotic troubles have a rational basis, but we do not discuss this aspect of erotic family trouble. These mentally morbid unfortunates blast innocent lives, break pure hearts and blacken and ruin clean and good characters and fortunes. Some day the world will better understand them. Among them are certain morbidly-minded

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jealous neuropaths to whose *erotically* and labidinously distorted minds,

> **"Trifles light as air are confirmations strong**
> **As proofs of Holy Writ."**

forming the basis for their psychopathic illusion and delusion. Included among them are also the non jealous, who from pure gynesiac hallucination and delusion make calumnious mischief for the innocent and virtuous and pure, worse than murder and most calamatous death. It were a great pity that these creatures were not more timely housed in a lunatic asylum or cliterodectomized. Their morbid erotopathic perceptions see great visions in the great smoke of a little fire or hallucination of unlawful love where there is not even the smoky basis of a vision. They dream in the day time, waking erotic dreams of clandestine *faux pas* and recount their dreams as verities, to the astonishment and horror of correct communities and set scandalous tongues, under control even of normal minds, to wagging, breeding, woe and misery of mind among the innocent and pure of heart and conduct. Thus the delusions of the insane often pass into the erroneous and false beliefs and unjust judgments of rational but mislead minds.

Woe betide the man, especially if he be a doctor in general or gynecological practice, who has the misfortune to become wedded to one of these morbid erotopaths, whose insanity is not marked enough to secure for him or her judicial commitment to an asylum. Pity also the physician with a large office practice among women, who may happen to have one such among his office patients who has developed morbid erotic yearnings after him and who insanely believes that not his moral sense and ethical obligations govern him, in his non-reciprocity of feeling, but his fondness for his other lady patients. These are the women to be especially wary of. He should, with prudent, timely caution get such patients into the hands of women physicians if he can, notwithstanding their usual aversion to their sex as doctors for women or into safe asylum treatment.

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Aside from the fact that this form of insanity appears to occur more frequently among women of refinement in education and environment, of the wealthy, leisurely class, who have opportunity to give rein to impulse and passion without the restraining and steadying influences of compulsory daily occupation, that morbid egoism which is prominent in all insanity prompts them, like the envious, to seek out shining lights for their shafts of morbid, erotic suspicion. Mental disease in its erotic phazes, as well as in its other forms, makes much mischief in the world. Its malice and suspicion, its mutual suicide compacts, its insane jealousies, its homosexualities and all of its many other diseased emotions and conceptions, have filled great volumes and made and unmade much of the world's marvelous history of pathologic love.

It is pitiful to see a normally pure, womanly mind transformed by erotopsychic disease into a demoniac creature of morbid distrust and suspicion, to whom all men and women among her most intimate acquaintances even have become impure. The psychic picture of these disease transformed creatures, is more commisserable than that of the good man gone wrong, the hopeless inebriate, for example, after a blow on the head or an attack of febrile delirium. But such is the ravage of mental disease. It digs deep among the neurones of the brain, undermines their integrity, removes the healthy inhibitions and brings into active mental life, through destructive cerebral disease, the latent and long suppressed aptitudes of generations long agone, impressions often unsconsciously received or scarcely perceptible at the time of their reception by the mind.

The alienist and psychiater are often impressed with this in their clinical experience. Their first impressions made in the female wards of the psychopathic hospitals, of morbid woman's depravity of speech and manner, in cases of erotic disease perversion of the mind, are startlingly profound and enduring. But mental disease is a process of alteration, degradation, degeneration, tending to destruction and dissolution of the psychic neurones and the student of neurology and morbid mind does not misinterpret the true

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ego of the natural individual by the appearances of disease deranged and changed mentality and consequent transformed personality. The female demoniac may have been in her normal mental estate a pattern of gentleness and purity of heart.

With the charity of true psychopathic science he covers the hideous mental distortions and wounds of these deformed and disease-changed minds with the shielding mantle of considerate pity. Some day the world will know these pitiable unfortunates as they really are, and pity too. Some of them suffer a world of woe and from some of them the world suffers woes unnumbered. The distorted visions, perverted emotions and deranged judgments, of an erotopath, physically diseased in the genito-mental sphere of her neural organisms, can raise the devil in a church, family or community. Gynesiac-minded women have disturbed nations precipitated wars and caused destruction of peoples. But the political philosophers, historians or economists know little, as yet, of the true, inward, morbid, psychic perversion of the feminine erotopath.

There are probably enough nasty normal sins of morality in Chicago without a false, distorted, delusion perverted coloring of morbid mentality. There is no need of an erotopathic artist to paint the putrid picture of this aspect of our large cities. But there are also good people there, many more than there were in Sodom and Gomorrah, good and pure and true, as in all large cities, who need protection from calumnious pens and calumnious thoughts of morbid minds.

These disease distorted minds need to be shielded from the newspaper portraitures of the city's immoralities and vice. Newspapers judiciously and parsimoniously regulated as to details of immorality and crime, would, by withholding suggestions to the morbid minded, avert much of the startling mental disease displays which make up a large part of the moral disorders set forth in the press chronicles of current crime and debauchery.

The psychologist may see in the asylums for the insane examples of the cliteropathic mind, descended so low

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in its estimate of mankind and womankind as to imagine all the world to be but a school of masked prostitution, and so disease degraded as to look upon virtue as only a name for clandestine immorality. But these creatures are out of their proper place, if mingling with the virtuous and moral. Their place is to be barred out from among the dwellings of the virtuous and pure of heart. They should be barred in behind the bars of a well supervised hospital for minds diseased. It is only thus that such diseased minds may be rightly ministered unto with due regard to the safety of society.

In this erotopathic phaze of mind a morbid inner consciousness connected with the neurones of the psychogenital tract supplements and supplants the necessity of objective impression and sets disordered erotic perceptions and conceptions in action. Subjective hallucination, illusion and delusion take the place in such minds of external fact. The wrongly working neurones of the brain, disease perverted, conclude that the world outside is wrong and formulates its delusive impression into speech and action.

In the asylums, delusions of illicit, impossible intercourse between others and often times, with the erotopath herself, are gravely related as real occurrences, to the medical officer on his morning rounds and stories of startling sexual immoralities which are only baseless, delusional fictions conceived by the morbid mind of these erotopathic insane are detailed by speech and letters by these patients. These delusional fictions are often told outside the asylums by similarly morbid-minded, who do not always impress the community with their insanity.

While the writer pens this incomplete description, the imaginary marvellous love experience and disappointment of a male eretopath patient, not in an asylum for the insane, but who should be there, is still fresh in memory. This young man of not especially prepossessing appearance is distressed to the point of suggesting suicide, by the pursuit of the many women he meets on the streets, in the cars and everywhere, who make signs and gestures and ogling eyes of love and infatuation, which he interprets aright,

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he thinks, though he has not the courage to act reciprocally and the infatuated creatures escape him.

No reasoning can convince him that his delusioned erotism is at fault. If I would only accompany him I could verify for myself the truth of his morbid statements on any street corner or street cars or other public place, he says.

He does not seek counsel nor treatment for this disease of the perceptive or reasoning areas of the brain, but for the nervous disturbance, the mental perturbation, disappointment and loss of sleep it has caused him. He is shattered by unrequited love and lost amorous opportunities. He details with imaginary precision how other men succeeded where he had failed to capture the numerous affections which would have been his, but for lack of courage to accept and act aright upon the erotic overtures of his many feminine admirers.

Such a man as this might make an Iliad of woes in refined society, if his erotic delusions were but centered around others than himself.

If a lady, strange to him, and at a distance from him, on a street corner, drops her handkerchief, it is for him to advance and pick it up. If she raises her parasol or gracefully lifts her skirt as she steps into her carriage or a street car, it is to attract his attention. The waving of her fan, the handling of her mouchoir, the gaze of her eyes as she casually looks at him, as one of many gentlemen on the street, or as her attention is attracted toward him by his peculiar appearance, are all especially designed, in his distracted fancy, for him. But the characteristic timidity and indecision of his sexual neurasthenia, (he confesses excessive masturbation) antagonize his morbid, egoistic, erotic impulse and he can not approach her as he knows she wishes him to. Every look and movement of the face, or body, are misinterpreted by him in egotistic erotic delusion.

One of my patients at the Fulton asylum for the insane, in the dodging period of the menopause, sought the embraces of any man who approached her, and through the bars of the corridor or of her room would importune the male employees without distinction even of color.

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The love of some of these persons is single and platonic and above reproach, for the opposite sex, in others it is multifarious, promiscuous, lascivious and passionate. With some it is Lesbian. In some it is continuous, in others it is periodic, recurring with the monthly mollimen and intensified with various states of the menses, with ovarian irritation and other disease of the uterine adnexa, and the menopause. But it is more often unassociated with appreciable uterine disease as uterine disease often exists without other psychic symptoms. I have known it to develop however, *pari passu*, with the growth of an ovarian tumor and in one instance to appear markedly manifest after the growth of an intra-neural uterine fibroid in a patient who had been previously exceedingly neuropathic. In this case the patient developed the delusion that her physician had caused her tumor by sexual congress with her under anæsthesia and hypnotism and had after that become a *roue* and abandoned libertine, forsaking her for many other women after her calamity, of which he was the author, without her knowledge. The erotopathy of this patient was one of other symptoms of mental disease. She had beed markedly neuropathic before the appearance of the tumor and under a long time of treatment by the denounced physician.

In some of these neuropaths, dipsomania supplants the morbid erotism, the inebriety supplementing and obtruding the genesaic aberration. (I have known also a spree of alcoholic intoxicants to bring into active life a somewhat latent and judicously suppsessed homosexuality, to the chagrin and disgrace of a gentleman, who thus exposed his weakness.) The neuropathic diathesis here, as in other morbid states of mind, plays its prominent part. A previous attack of insanity in some other form predisposing to it. It in turn may be succeeded or accompanied by other forms of nervous disturbance with mental derangement. Here also the vicious neuropathic chain and circle appear, the victim being at times better in this and worse in other phases of neuropathy; well apparently elsewhere in the chain of nervous disorder and very bad here.

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THE SUGGESTIVE TREATMENT OF HYSTERIA GRAVIS.*

By PROF. V. KRAFFT-EBING.†

THE relief of attacks of hysteria gravis often so annoying and presenting dangers for the patient and those about is one of the hardest tasks of medical art. The therapy confined to medicines (antispasmodics, tonics, narcotics) is very uncertain, if it is not to be denied that valerianate of zinc, the valerian preparations in general, but arsenic treatment especially, may somewhat contribute to the cure.

Inhalations of ethyl bromide, chloroform, energetic irritation applied to the individual spasmogenic zones, morphine injections are essentially palliative symptomatic procedures, therapeutically applicable to the individual attack, still not harmless owing to the danger of addiction to morphine.

Much more potent are hydrotherapy, psychotherapy and in form of isolation from the conditions in which the patient became ill, and positive—in the sense of purposive methodical medical psychagogy, where wake suggestions may play a prominent part.

But with all these aids it is often impossible to avert the fatal attacks, at best after long treatment amounting to months even, and relapses must always be kept in mind.

Whereas in numerous cases the results of a hypnotic treatment are surprising, particularly when it can be given under favorable conditions of an isolation from the family

*Zeitschrift für Hypnotismus, Vol. IV, Heft I.

†English by Dr. W. A. McCorn, Long Island Home. Amityville. N. Y.

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and the etiological influences. I have, like other observers, attained results in this way, which left nothing to be desired in way of rapidity and show these methods of treatment to be far superior to all others.

But it would be a great error to believe that this one method is suited to all cases and that the show cases, which the observer pleased with his success reports, would be the standard of the real worth and effect in such severe pathological conditions.

Beside such prizes many blanks appear and this cannot be otherwise, when it is considered how complicated are the conditions for success—sufficient susceptibility to hypnotism, superiority of exosuggestion to the patient's autosuggestions, which often seem almost insurmountable through stupidity, egotism, prejudice, etc.

Besides under certain circumstances there is a psychical obstacle—the masked psychical etiology of the case, by which its psychical analysis and thus the correct redaction of the suggestions to be imparted, suffer.

But when the psychical genesis of the case is clear, the effective psychical factors (painful experiences, ideas) are often so firmly rooted, that the ingenious methods devised by Freud and Breuer fail to eliminate them, also when it is impossible to bring the patient to state of more profound hypnosis (somnambulism).

Then often very annoying affects causing interference in the way of external occurrences incidentally damaging the disposition, or new manifestations of the disease inexhaustable in syndromes, are added to the result.

It is the worst when the hypnotic procedure is absolutely inert—the especially great and ever present susceptibility of hysterical patients to hypnotism is in no way met with according to my experience—when the physician necessarily sensitive, forfeits his prestage with the patient, or when in every attempt to hypnotize, the patient reacts by new attacks of his disease and shows himself very refactory to such hypnotic influence.

Such experiences have of late been the rule at my clinic. They may in part be ascribed to suggestions from

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presumable authority asserting the worthlessness and even danger from hypnotic treatment, which is true in part of the Vienna public. In this respect at least a great difference exists between Vienna and Nancy.

In many cases it is impossible to succeed by change in the methods, but failure is the rule, and brilliant exceptional cases are needed not to lose sight of the value of hypnotic treatment.

The cases communicated below are well suited for this purpose. In both, severe hysterical convulsive disease is apparently relieved permanently in a short time and a few sittings.

That here hypnotic treatment was decisive, in the pathological conditions for the causation of the disease were eliminated and the patient's resistance strengthened, is shown with great certainty by these cases.

This hypnotic influence must be more esteemed, for the surroundings were not advantageous, as the neurological ward for men at the Vienna Psychiatric Clinic consisted of only one hall, where the patients were constantly going in and out, so that the quiet and isolation desirable for hypnotic treatment are not to be attained.

The following cases also show that milder grades of hypnosis suffice to effectually combat attacks of hysteria gravis, and that it essentially depends on the degree of the patient's suggestibility.

I would largely give preference to the method for the attainment of sleep by psychical means. The inspiration of a little chloroform (Wetterstrand) occasionally smooths the way (patients psychically excited, whose concentration is difficult to effect).

Case I. Mr. A., gardener, of a strongly tainted family. The mother's father died insane. The patient's father, also his brothers, are constitutionally neuropathic, two having hysteria gravis.

From childhood A was irritable, emotional, stuttered, ambitious. Globus always appeared in emotions.

In 1886, in Italy had intense emotion, in that he was not mentioned at a horticultural exhibition with the hoped

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for prize and in that on June 19th he found his betrothed dead when he went to visit her, whom be believed to be in perfect health. He was in complete despair, attempted suicide; on December 2nd, 1886 had the first attack of hysteria gravis, which was soon followed by others. He was taken to the hospital, where right hemihypaesthesia and bilateral concentric contraction of the visual field were constated. Patient left the hospital on July 12th, recently had attacks (epileptoid phase, grands mouvements), remained nervous, irritable, emotional, depressed by trifles. In 1887 following an attack, contracture in the left upper and lower extremities for a month, which became more frequent after attacks, but of shorter duration.

Since 1888 the attacks recur every two-three months.

Right hemihypaesthesia, amyosthenia and concentric contraction of the visual field remain as permanent symptoms. In 1892 increases of the attacks after emotion.

Since January 12th, 1893 these became especially frequent and were followed by flexor contracture of the left upper extremity and extensor contracture of the left lower, continuing four days. Always after attacks occipital headache, great malaise.

In the intervals patient appeared terrified, emotional, complained of vertigo, pain and emptiness of the head. After an attack on January 18th, 1893 hysterical stuttering appeared.

Condition on admission to the Clinic February 3, 1893.

Patient 29, medium size, quite strong, pale, without disorders of sensation or the senses. No spasmogenic points discoverable. Amyosthenia in left upper and lower extremities, with dragging of the left leg in walking.

February 16th. Heretofore two-three attacks (epileptiod phase with arc de cercle) almost daily, beginning with headache, palor. Consciousness extinct. Duration three-five minutes. Occipital headache, greater stuttering, clouded vision in the left eye without contraction of the visual field always followed.

February 22nd. Hypnosis four times, easily attained by Bernheim's method supported by stroking the forehead,

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yet is now extended to profound engourdissement. Patient is extremely suggestible.

The suggestions imparted were:

1. You will have no more emotion, must have full confidence in your recovery, which will occur in a few days.

2. Your convulsions will soon cease, for you are stronger than the disease and can control them.

3. Your left side is strong again, your speech unaffected (stroking the left side and the tongue).

Stuttering and amyosthenia disappeared after the first sitting. Patient perceived monitions of the former convulsions, but was able to readily suppress them. Patient felt well, left the hospital early in March 1893, remained well, capable of work, married at the end of 1894 and was perfectly well as long as under observation (December 1895).

Case II. Mr. E., jeweler, brother of the former, always neuropathic, had globus from emotion, convulsions when a child, became hysterical (left amyosthenia, partial hypaesthesia of the fourth and fifth fingers to the metacarpus) after radicle operation for double hernia (June 13th, 1894). After intense emotion August 15th, 1894 first attack of hysteria gravis (epileptoid phase and grands mouvements).

Since then severe left amyosthenia and left hemianaesthesia.

Jacksonian attacks in form of left facial spasm and associated spasm of the left internal rectus and left external rectus, recurring at short intervals, always accompanied by violent headache and lasting about five minutes, occasionally passing to the left upper extremity.

The attacks of hysteria gravis occurred every two-three days, even to three times in one day.

As aura of these attacks violent headache, head drawn backward, then unconsciousness. The attack consisted of the epileptoid phase, then flexor contracture in the left upper extremity, extensor contracture in the left lower extremity; spasm of masseter, indication of arc de cercle. Duration rarely under five minutes. During the attack occasional clonic spasm of the jaw, now and then a periode de delire is added.

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Admitted to the clinic August 21st, 1894, patient appeared of medium size, graceful, cranium normal, right testicle retained in inguinal canal. Left hemianaesthesia for all qualities, then left anosmia, ageusia, akousia, palate and pharyngeal reflexes wanting on the left, vision normal, no contraction of the visual field, left amyosthenia.

Patient is given the usual antihysterical treatment. The Jacksonian attacks disappeared at the end of September, the left hemianaesthesia is reduced to the area of the fourth and fifth fingers to the metacarpophalangeal joint, where it persists.

The attacks of hysteria gravis do not change and as usual treatment has proven of no effect and the patient has the greatest confidence in hypnotic therapy owing to its success with his brother, it was commenced on October 26th, 1894 under these favorable circumstances.

By simple verbal suggestion it was possible to put the patient in profound engourdissement. The sittings on February 26th and 28th confined to explaining to the patient that his trouble is identical with that of his recovered brother, and that there is no doubt of his recovery. He must combat emotions and have confidence in his future. The constant suggestion of sleeping an hour post-hypnotically is effected, but not punctually.

On October 29th two ordinary attacks.

30th. Hypnosis, suggestion to avoid emotion and suppress attacks.

November 1st. Unforeseen intense emotion; patient perceptibly struggled against impending attack, but it finally occurred, although extremely mild.

From October 30th to November 2nd four hypnoses. Patient is precise in the fulfillment of the sleep suggestion.

November 6th. As patient has no more attacks and was not presented at the Clinic, to-day in the fifth hypnosis suggestion to come to the auditorium on the 7th at 4:30 and to have a seizure there at 4:45. This will be mild and certainly the last.

November 7th. Patient punctually carried out the suggestion given. The seizure was extremely mild and short,

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confined to the manifestation of the tonic portion of the epileptoid phase. On the 8th the sixth and last hypnosis with the declaration that the disease has disappeared and seizures can no longer occur.

November 17th. Perfectly well in the mean-time except mild cephalgia.

November 27th, 1894. Patient considers he is recovered. The residual anaesthesia of the left hand has disappeared.

December 18th, 1895. Well since and able to work.

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THE EVOLUTION OF THE NEURAXIS:

NATURE'S BUILDING OF THE BRAIN AND SPINAL CORD.

By CHARLES H. HUGHES, M. D.,

Dean of the Faculty and Professor of Neurology and Psychiatric Neuriatry, Barnes Medical College, St. Louis.

[*A Lecture to the Juniors and Seniors.**]

I AM not the first teacher in a medical school to make the observation that the study of anatomy and physiology of the brain, spinal cord, and connected nervous system is not generally pursued with that intensity of interest which its importance deserves, by the majority of medical students. Students of medicine seem inclined to ignore the minute study of the neuraxis, as many of them also seek to avoid as much as they can, the details of chemical and biological study, but the successful treatment of the nervous system demands of them a thorough knowledge of the exact relations between nervous function and structure in health for proper comparison with the changed nervous manifestations of disease. Beginning with the brain, that great English Corypheus of modern histological cerebro anatomy, Samuel Solly, who, following Tiedemann, the great German Vesalius of neuro-anatomy, in his day, sought to impress upon the medical world many years ago, when biology was yet young, the fact that the only philosophical method of simplifying and giving interest to the anatomy of the human brain, is by commencing with the structure and functions of a nervous system in the lowest and simplest forms of animal existence, and from this rise by degrees to the highest, carefully observing each addition or part and the relationship

*And chapter from forthcoming book of lectures by the author.

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borne by these to an addition of function. "By pursuing this course we shall be rewarded by finding that the enkepalon," Solly said, "this apparently most complicated organ in the human being, is but a gradual development from an extremely simple fundamental type on one uniform and harmonious plan and that the seeming complexity of the cerebro-spinal axis in man really arises from the great concentration, as opposed to extreme diffusion of its component parts in the lower order of animals; for in no particular are the higher orders more strikingly distinguished from the lower than in concentration of function within circumscribed spaces." As we proceed in our studies we shall, by the aid of this early master cerebro-anatomist and the help of other and later eminent teachers, see how important it is to look below us in the animal scale in order to clearly comprehend man at the top.

The study of comparative embryology in this way has not only contributed largely to our knowledge of the cerebro-spinal axis, but the highest interest of embryology centers in the light which this study has thrown on the nature and evolution of the entire human nervous system, in which this chair as teacher, and you as learners, are so intently and specially interested.

As the chief aim of your life will be to care for the brain, spinal cord and allied peripheral system, including the sympathetic and the organs of the body governed by and influencing this nervous system, it is proper that you should have, at least, an outline idea of its embryonic birth and development. By knowing something of its evolution you will be better qualified to delay or prevent that premature involution which morbid processes tend to bring about and may be, to delay the ordinary involution of age and promote longevity.

The human embryonic nervous system starts its life from a small beginning, a protoplasmic vesicle born of the union of an ovum and a spermatozoon. In the beginning a spot of protoplasm merging into a streak of epiblast called the medullary plate and developing first into an elongated neural tube larger at one end, (the an-

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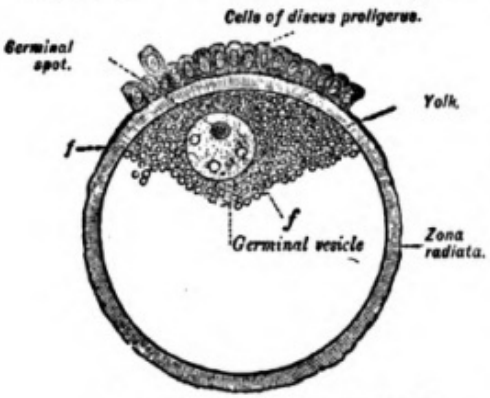
terior) than the other, from which are evolved the different antero-posterior segments of the brain described by neuro-anatomists, and from the lower end of this tube develops the spinal cord. Of man's origin as the poet has said of man's entire life, it may be said,—his time is but "a moment and a point his space."

FIG. 93.

Human Ovum and Germinal Vesicle (after Macalister)



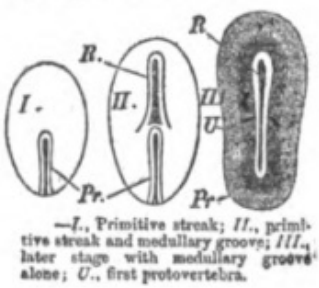
Ovum, diagrammatic—*f*, secondary nucleoli.

—Portion of ovum extruding a polar body, and showing a spindle and diaster. The inner star surrounds the female pronucleus, the outer is beneath the polar body. The male pronucleus is close to the female.

A PROTOPLASMIC VESICLE BORN OF AN OVUM AND A SPERMATOZOÖN.

FIG. 94.

Primitive Streak and Medullary Groove (Macalister)



—*I.*, Primitive streak; *II.*, primitive streak and medullary groove; *III.*, later stage with medullary groove alone; *U.*, first protovertebra.

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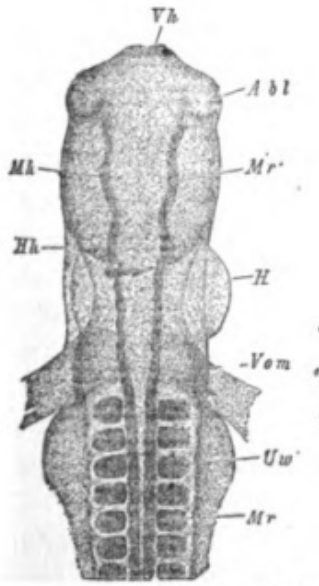
FIG. 95.

—The epiblast involuted to form the central nervous system while still a single layer, rabbit (after *His*). A round germ-cell lies between the proximal ends of two supporting cells. Obersteiner.

The accompanying diagram, much like one of Kollman of Jena, which I have taken from MacAlister's Anatomy, and the embryonic sections following it, will serve to show us how small and simple are the beginnings of neural life and to cause us to marvel at the mysteriously and wondrously wrought nervous mechanism of man and the lower vertebrata.

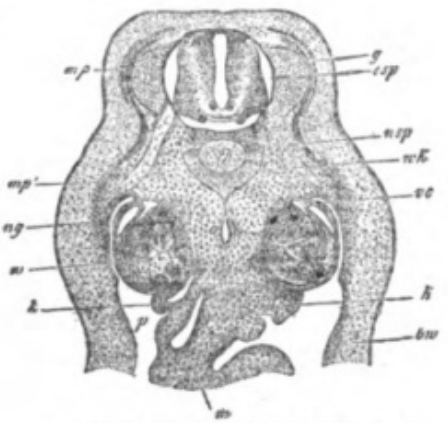
THE GERMINAL TUBE OF THE EMBRYONIC NEURAXIS.

FIG. 96.



—Diagram of anterior end of neural canal—*Abl*, optic vesicle; *H*, heart; *Mk*, wall of mid-brain; *Vom*, omphalo-mesenteric vein; *Uw*, protovertebra.

FIG. 97.



—Section of embryo, showing formation of vertebral body around the notochord—*esp*, spinal canal; *nsp*, spinal nerve; *wk*, body of vertebra forming around (*ch*) the notochord; *mp*, muscle plate; *a*, aorta; *p*, cœlom; *bw*, somatopleure.

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The germinal embryonic tube of the neuraxis closes nteriorly in the process of development. It then swells first into the three and later into four and finally into five vesicular centers located one after or below the other. The first three divisions constitute the anterior, middle and posterior germinal cerebral vesicles. The anterior cerebral vesicle is then soon divided by the development of the falx cerebri growing out of what is called the secondary vesicle of the fore-brain, which is the beginning of the division of the anterior cerebrum into its two hemispheres. The falx cerebri being the product of the secondary vesicle of the fore-brain does not descend into and bisect the other vesicles in their evolution, but stops above the corpus callosum, basal ganglia and the other more posterior and lower or basal divisions of the brain.

The cerebrum and cortex, caudate and lenticular nuclei (these two latter being cortex formations) with the fornix and corpus callosum, are developed from the secondary anterior cerebral vesicle. This forms the anterior or fore-brain, prosencephalon or telencephalon as it is variously termed.

The primary cerebral vesicle (Vh) makes the tween-brain including the optic thalami and commissure, corpora albicantia and infundibulum. The secondary vesicle having evolved out of the primary cerebral vesicle.

The mid-brain (and this is an unfortunately confusing term as distinguished from the tween-brain) is formed from the middle vesicle (Mh) and includes the corpora quadrigemina and peduncles or crura or legs of the cerebrum. Mid and tween are so near alike in meaning that it might have been well to have included the near enough related parts which make up these two divisions under one common designation viz., the quadrigeminal bodies and crura. The fewer and simpler these divisions the better, but as I did not make them I make no further apologies.

The mid brain Hh., is made up of the cerebellum its peduncles and the pons Varolii. It is developed from the anterior of the two under or lower vesicles, Hh. Last of all comes the after brain and this is an ill chosen designa-

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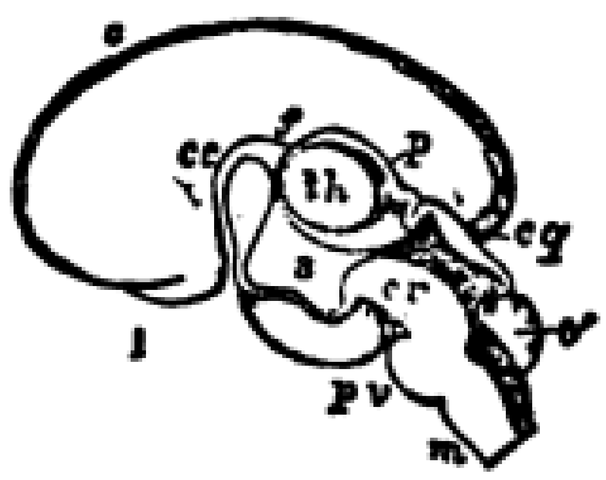
tion to distinguish it from the hind brain, hind and after being so nearly synonymous. But it is the language of neuraxis embryological evolution and we must accept it as faithful followers of the Masters. Fortunately its meaning is easy to remember. The after brain is made up of the medulla oblongata alone and is developed from the posterior (Nh,) of the two under germinal cerebral vesicles.

Brain structures are also divided into brain mantle and brain stem or caudex. All structures developed from the secondary vesicle are included in the brain mantle. The structures formed from the remaining vesicles, excluding the cerebellum, constitute the brain stem or caudex. The mantle or cortex structure of the brain envelops the most of the surface of its three primary vesicles after they have evoluted into brain structures. Mantle and cortex meaning respectively covering and rind, the latter the same thing only more closely fitting.

The germinal vesicle cavities evolute into ventricles and aqueducts or canals. Thus, that of the cavities of the secondary forebrain evolves into the lateral ventricles, that of the primary forebrain (Vh) before division and the hind brain respectively, furnish the third and fourth ventricles and spinal canal, while the mid-brain germinal vesicle cavity makes the aqueduct of Silvius which connects these ventricles. Lower down the germinal tube in the diagram (Mr) is the cavity of the central canal. The vesicle cavities become the permanent brain ventricles and the foramen of Monroe.

FIG. 98.



—Vertical longitudinal section of brain of human embryo of fourteen weeks. 1 × 2. (After Sharpey and Reichert.) *c*, cerebral hemisphere; *cc*, corpus callosum beginning to pass back; *f*, foramen of Munro; *p*, membrane over third ventricle and the pineal body; 1h, thalamus; 3, third ventricle; *l*, olfactory bulb; *cq*, corpora quadrigemina; *cr*, crura cerebri, and above them, aqueduct of Sylvius, still wide; *c'*, cerebellum, and below it the fourth ventricle; *pv*, pons Varolii; *m*, medulla oblongata.

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The frogs of the bogs, the crocodiles of the Nile and alligators of the Mississippi, the codfish and whales of the sea, the giants and dwarfs of the jungles and forests, the lizards and toads and reptiles of the fields and the fowls of the air as well as those anthropoid apes which make Darwin's connecting link in animated nature with man, have helped us to know our brain and other portions of our neuraxis.

Man's nervous system begins also with the outer of the three vesicle layers of the primitive embryo viz.—in the epiblast as we have said, which gives origin to the nervous system along with the intimately connected epidermis, with its hair, nails and glands and the mucous membranes of mouth, pharynx, anus and the perceptive surfaces of the special sense organs. This is also called the neuroblast, νευρον, a nerve and βλαστος, a bud, because the neuroblast is the bud of and evolves into the nervous system.

The mesoblast is also important as it gives rise to the neuroglia, the derma and connecting tissues generally, the serous and mucous wall linings of the bodies, cavities and vascular system, the non nervous internal genital system, the muscles, bones and bodily excretory organs. And we note here that a division begins with the very beginning of organic life. The germinal vesicles are assigned specialties of work in the animal economy from the start and the evolved organs keep up the work to the finish of existence. The mesoblast is the middle and the hypoblast the innermost layer of the primitive embryonic growth.

Von Mihalkovics has given to embryological science a microscopic section of the brain and medulla of a chicken four and a half days old, which Edinger and other delineators of the embryonic central nervous system have reproduced. It shows the five brain vesicles fairly well developed, so well by comparison with the much further advanced human fœtus, as for example that of His at about four weeks,* that it may be preferably used for our instruction today.

Look on this embryo chick and upon the other illustration and delineations of man's evolution in the department of embryology and note how man is inexorably

*See Duane's Dictionary, Plate Iv.

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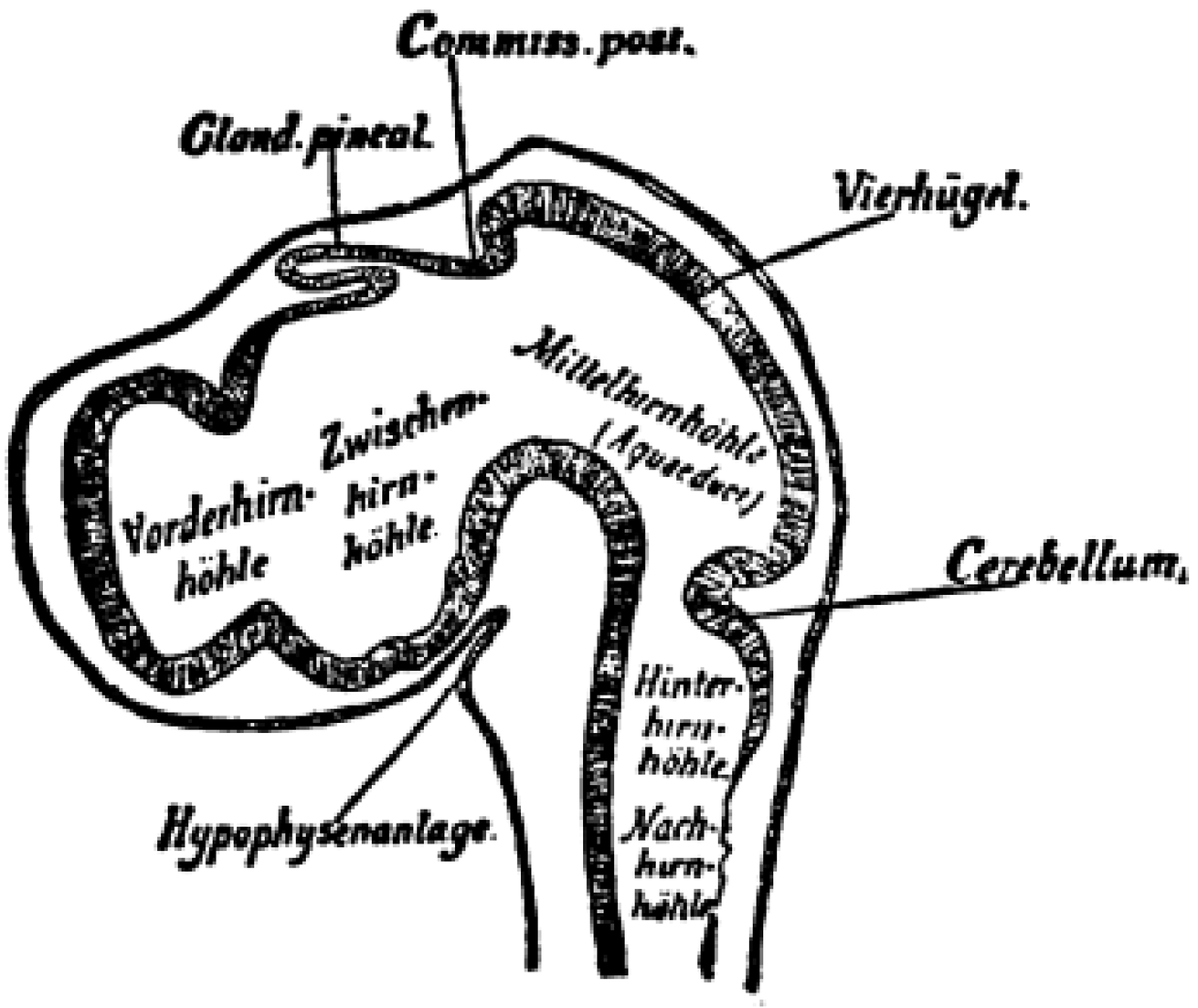
chained to nature in his evolution and environment, and realize how important it is for you to keep close to the revelations of nature in your study and work and give heed unto her instruction. She speaks a forceful and unerring, though silent language for your guidance.

FIG. 99.

Mihalkovic's Diagram of Neuraxis Evolution and Brain Regions.



Longitudinal section through the head of an embryo chick of 4½ days. The five brain-vesicles are pretty clearly marked. In the roof of the inter-brain is a fold which later on becomes the pineal gland. The epithelium of the pharynx is being pushed up toward the base of the brain, and is the first rudiment of a portion of the hypophysis. (After Mihalkovics.)

Hinterhirnhöhle, Hind-brain cavity.
Hypophysenanlage, Rudiment of hypophysis.
Mittelhirnhöhle (aqueduct), Mid-brain cavity.
Zwischenhirnhöhle, Inter-brain cavity.
Nachhirnhöhle, After-brain cavity.
Vierhügel, Corpora quadrigemina.
Vorderhirnhöhle, Fore-brain cavity.

The prolongation of the spinal cord within the cranial cavity, though classed with the brain, is called the medulla oblongata. It is distinguished from the cord below by its form and by the arrangement of its gray and white matter. Its form and relations give it its name, oblong medulla. The gray substance of the cord on each side expands into

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anterior and posterior horns, but recedes backward in the medulla oblongata and expands into a continuous layer posteriorly. The posterior columns of the spinal cord at the top of the cord are made up of white matter and diverge into an acute angle forming the restiform bodies and making postero-lateral walls for the fourth ventricle located between them. The restiform bodies continue into and become a part of the inferior peduncles of the cerebellum.

In front, the medulla has two longitudinal elevations of white matter on each side of the median line. These are the anterior pyramids which are continuations of and bulbus-like enlargements of the anterior columns of the cord. At their lower portions they exhibit a decussation or crossing formed by oblique bundles or fibers crossing the median line from below upward to opposite sides. The right anterior pyramid fibers come from the left side of the cord and the left anterior pyramid fibers cross over from the right side of the cord. This arrangement forms the often spoken of and written about pyramidal decussation in the motor tract or pyramidal tract of the cord.

Immediately outside each pyramid and almost adjoining it on either side is the elongated olive shaped olivary body called the corpus olivaria, consisting externally of white substance, but internally of a thin convoluted layer of gray matter, resembling in miniature the convolution of a hemisphere. They are centers of gray substance in the medulla oblongata, super-added to the rest, and not continuous with that of the spinal cord. They have an individuality and separate, though joined, existence, to the cord, like a neurone of the brain cortex.

At the upper limit of the medulla oblongata is the tuber annulare, so called because it forms a ring-like protuberance at the base of the brain, also called the pons Varolii because it bridges over the crura cerebri and named after Varolius, who discovered it. Superficially it consists of transverse bundles of fibers passing over, in an arched form, from one side to another of the cerebellum. Strictly speaking it is only fibers of the tuber annulare that con-

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stitute the "pons Varolii," but the entire tuber annulare is most frequently designated as the pons.

This life in the human organism, as in all other animal life, begins with the protoplasmic cells. The neurone, with its appurtenances, the neuraxone, axone, neurite or axis cylinder process and its dendritic proliferations, is the unit of human anatomy. These cells perverted in structure and function are the foundation of pathology, the cellular pathology of the great Virchow. These cells undergo multiplication and obscure complex transformation whose precise manner of change and aggregation into organism is as yet somewhat beyond the ken of science. We will not inquire more minutely into the peculiarities of individual cell development, though with all of its obscurity, it is an interesting phase of cytology. Hence we begin our description today with the initial organic beginnings of life, viz.: the blended ovum and spermatic vesicle, and from all that we have seen or may see from our glimpses thus far of cytology and embryology, we have derived instructive confirmation of the old maxim, *omne vivum ex ovo*.

The teachings of Nature do not confirm the fiat of spontaneous generation.

There was once upon a time a divinity student examined on the subject of creation and, when he was asked the question, *quid est crerare?* he answered, *ex nihilo facere*. To this the inquisitive Professor responded, *ergo te doctorem faciamus*. This was nearer to spontaneous generation than science carries us, and a medical doctor could not be made that way. He was a divinity student.

From this consideration of man's origin embryologically we may be prompted to ask with the poet, "Why should the spirit of mortal be proud?" for he begins in a spot and a streak, a primitive streak and a medullary groove; "his time a moment, and a point his space."

His life begins in a microscopic germinal nucleus or vesicle, this nucleus consisting of a homogeneous membrane enclosing a network of protoplasm called nucleoplasm and this nucleoplasm is itself made up of infinitesimal protoplasmic threads or filaments of exceedingly complex or-

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ganism whose composition consists of many thousands of molecules, computed at near half a million.

Here is a drawing of the human ovum and germinal vesicle from Macalister's Anatomy. (See first and second illustrations in this chapter.)

Two faint ridges called medullary folds (*laminæ dorsales*) appear in front of the primitive groove, on eash side of the middle line. The furrow between them is called the medullary groove (*R*), and is floored by a streak of epiblast called the medullary plate. The medullary folds unite in front of the medullary plate, at the anterior end of the embryonic area and, as in the course of growth they gradually extend backwards, they push the primitive groove to the hinder end of the area, where it finally disappears (*III*).

Coincidently with the formation of the primitive groove, an intermediate series of embryonic cells appears between the epiblast and the hypoblast.

The embryo (Figs. 96 and 97) is composed of thirty or forty segments, which begin to appear shortly after embryonic life commences. The metameres or somites are ventral and dorsal. Each ventral metamere unites in the process of development with another ventral metamere or embryonic segment to form the cavities. The dorsal metameres unite with each other to form the other parts, viz.: the myotomes or muscle segments, the sclerotomes, or bone segments and other hard tissues, and neurotomes or nerve segments, etc.

The segmentation of the germinal tube may be seen forming into metameres (commencing metamerism) and these metameres beginning to form myotone, sclerotone and neurotone in Figs. 96 and 97.

An outline of the five primitive vesicles appears in Fig. 96, and the metameres are seen in process of evolution.

The notochord, *esp* in Fig. 97, (νωτος, the back, plus χορδή, string,) is the chordæ spinalis, or primitive backbone — a fibro-cellular or cartilaginous rod-like structure which is later developed into vertebræ, as the basis of the future spinal column and about which the bodies of the future vertebræ are formed. It is one of the earliest em-

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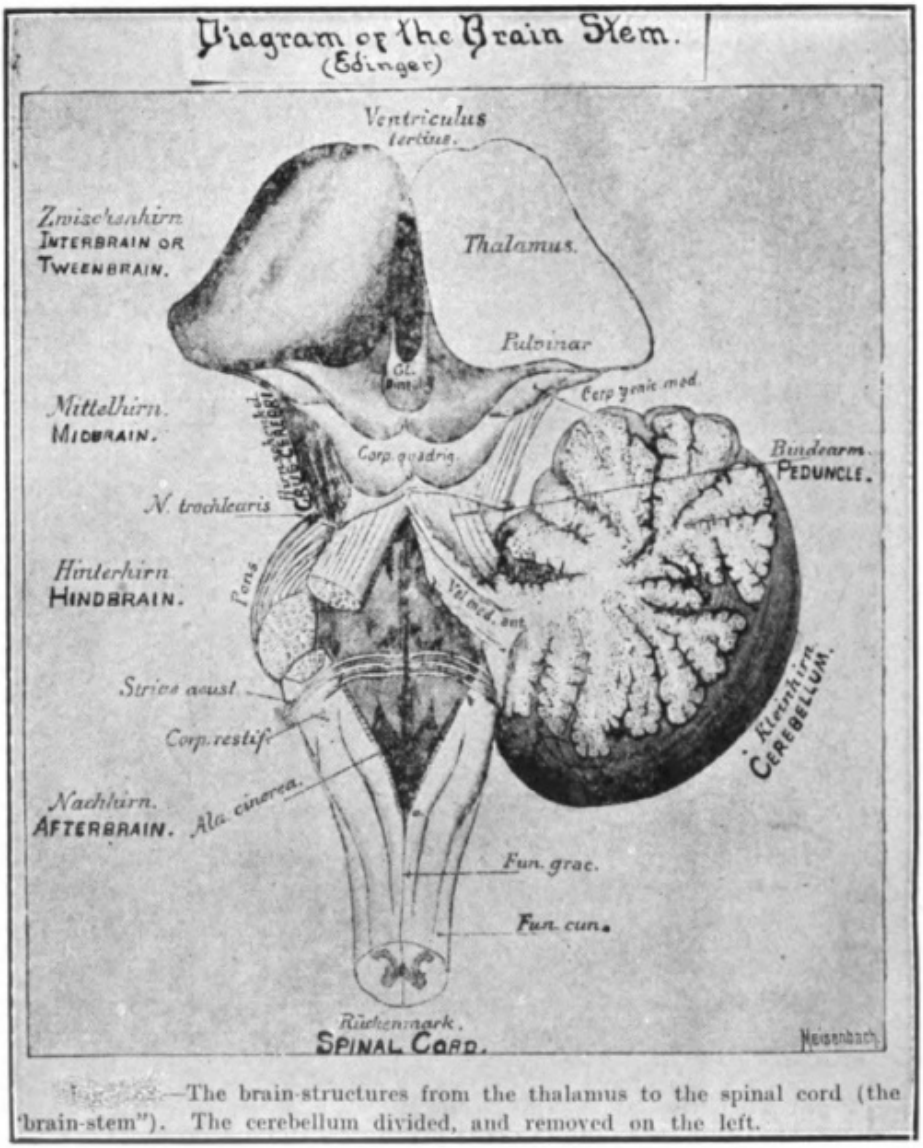
FIG. 100.



—The brain-structures from the thalamus to the spinal cord (the "brain-stem"). The cerebellum divided, and removed on the left.

Practically the brain mantle is all of the brain above this.

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bryonic structures and persists throughout life in many of the vertebrates, which are on this account called notochordal. It is the embryonic canal developed from the cells of the mesoblast lying in close proximity, in the illustration, to the later evolved spinal cord.

It is later on in the process of embryonic development, absorbed and replaced by spinal column which in man is always bony, though in some of the lower animal species it is cartilaginous. The soft pulpy substance which filks the cupped ends of the fishes' vertebræ is notochord remnant."

[*This subject will be continued in subsequent lectures and in the author's forthcoming book.*]

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EDITORIAL.

[All Unsigned Editorials are written by the Editor.]

FORENSIC ASPECTS OF PSEUDO-HERMAPHRODISM.—The recent application of a male, pseudo-hermaphrodite, educated as a female, to a Syracuse (N. Y.) court, to have his legal status fixed as a male is (Medicine, March, 1902) far from unique. Pseudo-hermaphrodism is sex arrested at the period of sex indifference. The amount of assimilable nutriment of the fœtus being fixed, the portion needed for the sexual organs necessarily varies with the condition of the maternal organs. Since development of male organs from the indifferent types does not require so much nutriment as does female development, imperfect maternal nutrition tends (Geddes-Thomson: Evolution of Sex) to result in male organ tendency. If maternal nutrition be affected when sex organs have undergone partial female differentiation, pseudo-hermaphrodism results. True or bi-

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lateral hermaphrodism can only be produced by conditions which cause organ duplication. In this case the lessened amount of nutrition is divided between two sets of organs. One set is arrested at that point in embryogeny when the male type is becoming dominant. Under the Roman law the legal status of hermaphrodites was fixed by making them possible witnesses to wills. The legal presumption was that the hermaphrodite was a male. While sex could be questioned this presumption obtained until female organ predominance was demonstrated. In settling sex legally the rule of predominance of sex characters obtains nearly as strongly as it did under the Roman law. The English common law with its scientific rules of evidence, affords an easy logical method of settling sex predominence in each individual case.

The subject has most forensic importance in the United States in connection with suffrage and marriage. Here existence of menstruation as an evidence of female predominence, has been most strongly contested. This was the chief issue in the suffrage cases reported by Dr. Harris of Virginia and Dr. Barry of Connecticut (*American Journal of the Medical Sciences*, July, 1847). Menstruation *per se* is, however, not demonstrative evidence of femininity. It has occurred in the male as witness the cases reported by Pinel, Fournier, Forel, King, Rayman and others (Gould's Anomalies). Fournier's case was that of a thirty-year-old man who had menstruated urethrally since his first coitus which occurred at puberty. He experienced pains of premenstrual type twenty-four hours before the flow. These subsided when menstruation began. The flow was abundant on the first day, diminished on the second and ceased on the third. The case of Dr. Barry was decided in favor of masculinity despite some evidences of menstruation.

Hermaphroditic states are also forensically involved in marriage, divorces, sterility and impotency. Education may give sex direction rather than any innate tendency. Windle (*British Medical Journal*, June 14th 1886) reports the case of a male who had undergone arrest of development toward the female type, was brought up as a girl, had unusually

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pleasing womanly qualities and as a result was married thrice to intensely devoted husbands, but the real sex was never suspected until the necropsy demonstrated that the supposed woman was a male. In an Italian case (*Gazette degli Ospedali Milano*, July 29, 1895) the question of inheritance as a male was not settled until fifty-one years after birth. "She" was married at twenty-one but found coitus repugnant and painful. Ten years after "she" separated from "her" husband. Dressing as a woman "she" copulated with women. "She" had an altercation at the age of fifty-one with "her" brother. "She" prosecuted him for assault and he in turn charged "her" with seducing his wife. As a result "she" was judicially decided a male. Cases of divorce because of errors in sex are far from infrequent in European continental courts. Neugebauer has collected fifty-one cases, of which forty-seven were males and four females. Three females had married female pseudo-hermaphrodites. In one of these cases the husband had been delivered of a well-formed male child at term. One male pseudo-hermaphrodite had lived with three successive husbands. The last obtained (*Annals d'Hygiene Publique*, Aug., 1901) a divorce because of infection with venereal disease by his partner.

Cases in which male pseudo-hermaphrodites have proven potent are frequent in the literature. A pseudo-hermaphrodite (who passed for many years as a female) had a cleft scrotum and hypospadias; sleeping with a fellow servant for three years he had frequent coitus and finally impregnated her. In another case (Gould's Anomalies) pregnancy and delivery occurred in a girl impregnated by a bed-fellow who proved to be a male pseudo-hermaphrodite. Such relationships however do not demonstrate sex since sexual inversion, as Kiernan remarks (*Alienist and Neurologist*, 1891) may result in pseudo-hermaphrodites from experiments by females with the enlarged clitoris of the female pseudo-hermaphrodite or by males with the cleft scrotum of the male pseudo-hermaphrodite. G. F. Lydston reports (*Medical and Surgical Reporter*, June, 1899) the case of a young mulatto who had marked hypospadias and

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an affinity for women since he contracted a gonorrhea in the normal manner. He also had a predilection for the passive role in the act of copulation since a number of lads ranging from ten to seventeen years of age (who lived in the neighborhood in which the spurious hermaphrodite was employed as a cook) contracted gonorrhea from him.

In some cases the urethra as in the female shrew-mouse perforates the clitoris. In other cases the penis is imperforate. Dr. McBurney by a plastic operation enabled a victim of imperforate penis to urinate when erect. The sexual inclination here varied with dress; male attire inclined it to the female and female to the male. A "sister" had an allied deformity.

A tendency to hermaphrodism occurs in families.

Phillips (Virchow's Archives LXXV) reports four cases in one family. Pozzi (*Gaz. Med. de*, Paris 1885) reports a family of nine in whose descendants this anomaly was found. Hermaphrodism is one transformation of heredity occurring in degenerate stocks.

Dr. S. D. Gross once performed a castration to deprive a child of sexual appetite and marital tendencies. The child at the time was three years old. Until two years of age it had been considered a girl. It then began to evidence male tastes, dispositions and feelings. Instead of the penis there was a small clitoris and instead of the vagina a superficial depression covered with mucous membrane. The urethra occupied the female situation. The nymphæ were diminutive. The labia were well developed and each contained a normal testicle. Three years after castration, the disposition and habits of the child underwent radical change and it delighted in female occupations. Gross advocates the operation, still there are serious doubts as to its justifiability. Castration, as Wharton and Stille remark (Medical Jurisprudence, Vol. III, p. 150) removes "merely the external and in cases like this, the very distinct evidence of sex and hence only adds to the doubts of the rightful sexual character. It does not necessarily extinguish the sexual instinct nor deprive the person of

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his only incentive to matrimony and finally it in no way relieves him from the odium or aversion with which the malevolent or ignorant may regard it." The surgeon, however, would not be guilty of malpractice provided consent in the legal sense of the term was obtained for castration of such patients.

The term hermaphrodite applied to a normal person in contempt has been judicially declared to be libelous, yet, as Wharton and Stille admit, it tends to create odium. In Scotland this odium has led to the judicial burning a pseudo-hermaphrodite for impregnating a girl. The psychoses most frequently found associated with pseudo-hermaphrodism are, as might be expected, the degenerative types.

FIRST TO VACCINATE.—Should one be asked who discovered that smallpox could be prevented by vaccination, he will at once answer Doctor Jenner, yet an epitaph was recently discovered which seems to indicate that he was not the first to employ inoculation as a preventive of this disease.

The epitaph is engraved on a stone in the cemetery at Maltravers, in Dorset, England, and it reads as follows: "Sacred to the memory of Benjamin Jesty, of Downshay, who died April 16, 1816, at the age of seventy-nine years.

"He was born at Yetminster, in this county, and was an upright and honorable man; moreover, he acquired a wide reputation, since he was the first to use cow-pock for the purpose of vaccination. Thanks to his powerful intellect, he was enabled, in 1774, to make successful experiments in this direction, and among those whom he inoculated were his wife and his two sons."

Doctor Jenner, it is said, did not make his first experiment until 1794, whereas Jesty, according to the epitaph, experimented successfully in 1774—twenty years earlier.

THE MISCONSTRUCTION OF THE CODE OF ETHICS which enjoins physicians against the methods of advertising like the quacks, *i. e.* by offering to give public advice

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to the poor gratis and by private cards or public handbills proclaiming ones skill to cure special diseases, has deterred capable physicians from imparting the kind of information they ought to impart on all proper occasions to the public. Up to date the public has obtained most of its knowledge indirectly from published accounts of epidemics, etc., and what Health Boards are doing and from occasional newspaper extracts from Medical Society proceedings selected on the judgment of non-professional and of inexpert newspaper reporters and from the alarming, overdrawn and often perverted statements made in quack advertisements.

Often the first and only knowledge of what the medical profession is doing gets to the public through the last named mercenary channels, who often pay tribute to the great work of the medical profession by indirect reference to the merits of its dead Masters and by naming their quack establishments and more or less fake remedies after our great names. For we know, though the public does not, how many of the patent medicine men of our time have been simply drug store clerks or bottle washers or porters sometimes in doctors' offices, evoluted and transformed into patent medicine proprietors and kings of gullibility and Napoleons of fake finance founded on humbug—folly in matters medical and fake healing with the people, because we who have the light to shed give it not, but leave the popular medical world in darkness.

INSANITY IN THE NEGRO.—The statement has been made by Professor Stanley Hall that insanity is rare in the negro and that he proposes to ascertain the cause for this. Any assertion anent rarity, frequency or increase of insanity always requires analysis. Among primitive races, frontier or mountain communities, mental states pass muster, which, in urban communities or thickly settled districts, would be sent to insane hospitals as dangerous, because of their inability to adjust themselves to the intellectual strain of such an environment. For this reason and partly because of the discipline of slavery, insanity was thought to be comparatively rare among negroes. Fifty-

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four years ago the eminent Southern alienist, John M. Galt, remarked that (Treatise on Insanity) "the proportionate number of slaves who become deranged is less than that of free colored persons and less than that of the whites. From many of the causes affecting the other classes they are somewhat exempt. For example they are removed from much of the mental excitement to which the free population of the Union is necessarily exposed in the daily routine of life, not to mention the liability of the latter to the influence of agitating novelties in religion, intensity of political discussion and other elements of excessive mental action, which is the result of republican form of government. Again they have not the anxious cares and anxieties relative to property which tends to depress us as free citizens. The future which to some of the white population may seem dark and gloomy to them, presents no cloud upon its horizon. Moreover not only are they less exposed to causative influences of a moral character, but the mode of life which they lead tends to strengthen the constitution and enable it to resist physical agents calculated to induce insanity." The existence of insanity among negroes in the United States has greatly increased since emancipation. As Dr. J. W. Babcock, of Columbia, South Carolina, several years ago pointed out (*Alienist and Neurologist* 1895, page 423), brain diseases have become more common in the negro as compared with the whites, having increased according to the census from one-fifth as common in 1850 and 1860 to one-third as common in 1870 and to one-half as common in 1880 and 1890. According to the figures of the Census office the negro insane of the United States were in:

1850	538	giving a ratio of	175	per million.
1860	766	"	"	"	"	169	"	"
1870	1,832	"	"	"	"	377	"	"
1880	6,157	"	"	"	"	912	"	"
1890	6,756	"	"	"	"	886	"	"

By the last two enumerations the proportion of colored insane in different parts of the country were as follows:

	1880	1890
Northern States	1 in 545	1 in 542
District and Territories	1 in 680	1 in 376
Southern States	1 in 1,325	1 in 1,364

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In Virginia the increase of insanity in the negro has been for twenty-five years so said to occur at the rate of 100 or more per cent every ten years. Increase of insanity in the negro after emancipation began to be recognized by Southern alienists as early as 1867.

The percentage of insane negroes in Chicago, according to Kiernan, is practically the same as among the whites. The degenerative types, however were double the number among white Americans. The percentage of paretic dements was twice as great as that found among negroes in New York and more than twenty times as great as among the negroes in the South.

The increase of sadistic rapes by negroes since the war is an indication of the existence and influence of degenerative factors. Seventeen years ago Kiernan remarked that (*Journal of Nervous and Mental Disease*, 1885,) among the psychic phenomena presented by negroes, which most deserved study, were revival of the Voodoo superstitions and the frequent recurrency of attacks of sexual furor, especially in the Spring. "These last, which in their predominant characteristics most strongly resemble the attacks of sexual furor in the bull and elephant are analagous to the running "amok" of the malay. It is difficult to study these attacks of furor since they are soon treated by the prescription of lead, hemp or steel in sufficient quantities to produce euthanasia. It is noteworthy that these attacks were rare during the war, when the fidelity of the negro to the wife and children of the absent master was proverbial and that they are especially frequent in States once coursed by "Carpet-bag" statesmen, whose changes in the social status of the negro were especially frequent." Developments since this time show that much of the sexual furor of the negroes is of a sadistic type, which finds enjoyment in torture of the ravished victim. In its essence it is akin to the crimes of the "hair clippers," the "dress destroyers" and the tortures of "Jack the Ripper" type. Sadism originates, as Kiernan has pointed out (*Alienist & Neurologist*, 1891) in hunger. Conjugation occurs, as Rolph remarks, when nutrition is diminished, whether this be due to

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want of light or the lower temperature of autumn or winter or to a reduction of the organism to minimal size, it is a necessity for satisfaction of a gnawing hunger which draws the animal to engulf its neighbor to isopathy. The process of conjugation is merely a special form of nutrition, which results on a reduction of the nutritive income or an increase of the nutritive need. It is an isophagy which occurs in place of an heterophagy. The less nutritive and therefore smaller, hungrier and more mobile organism we call the male; the more nutritive and as a rule relative, more quiescent organism the female. Hence it is that the small, starving male seeks out the larger, well-nourished female for purposes of conjugation to which the latter, the larger and better nourished, is on the motive, less inclined. Without conjugation, as Maupas remarks, the members of an isolated family of infusoriac eventually ceased to feed and divide and pass through stages of degeneracy and and senility to extinction. That this association of love and hunger longer persists, is shown in the case of what Emerson calls the

> Demon spider that devours his mate
> Just free'd from her embraces.

The negro from stallion-like sexual excess develops perversions on the principle that a nerve too frequently irritated by given stimulus, requires a new stimulus to arouse it. Another factor to be considered is that white contempt for virtue of the negro female (which existed before emancipation) naturally creates a similar psychologic state in the male negro, who has aimed ever since the war to put himself on an equality and even superiority to the white. To such a degree has this last been carried, that antagonism between mulattoes and comparatively pure blooded negroes results. This last produced in the negro republics of Haiti and St. Domingo the extinction of Mulattoes by massacre. While in these two republics increase of insanity is not traceable, still the reversions to barbarism (shown in the cannibalism which, according to the admission of Fred Douglass, existed as late as 1867) would

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enable intellects (which in a civilized community would be regarded as warped) to pass muster there. While negro ethnologic psychiatry needs study, its problems must not be approached from on a prior standpoint.

IN MEMORIAM—Eugene G. Carpenter, A. M., M. D., Superintendent of the Columbus State Hospital, died October 19, 1902, of apoplexy. Born in Richland county, Ohio, in 1858, he graduated from the Mansfield, O., High school, Ohio Wesleyan University and the College of Physicians and Surgeons, Baltimore, Md. In 1885 he was appointed assistant physician to the Cleveland State Hospital. In 1898 he was appointed Superintendent of the Columbus State Hospital. Many improvements were made by him in the management of the insane and in the general appointments of the institution. Among them an acute insanity disease infirmary and pathological department. In 1898 he was elected Professor of Mental and Nervous Diseases in the Ohio Medical University, and Neurologist to the Protestant Hospital. "In his death the state has lost a distinguished and capable official, the University with which he was connected an eminent teacher, and the profession an honored member." He leaves a widow and son, Eugene Carpenter, and hosts of friends to mourn his demise.

A YOUNG MARRIED MAN, with a wife elsewhere, makes a matrimonial engagement with another woman, but failing to secure a divorce, his second fiance marries another man, when he proposes a mutual suicide poisoning plan. This being refused, he swallows one of the fatal potions himself and dies in her presence. This form of conjugal erotopathy with the suicide of one or both parties when obstacles come in the way, is not uncommon.

With all the obstacles which would surround a liaison in a doctor's office, a physician told me of one of his patients who had previously been in an insane asylum for a functional psychosis who, when mental trouble returned in erotopathic form, offered herself to him, and, on his declining and advising her to think of other things and to marry, be-

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came erotically suspicious of his character and spent many weeks afterward in a disagreeable espionage of his office and visits there and thereabouts, until her aberration assumed other phases and she was recommitted to an institution for treatment and supervision.

Tuke's Dictionary of Psychological Medicine refers to a feature of this subject briefly as "Old Maid's Insanity," a form of insanity so called by Dr. Clouston, and "Ovarian Insanity," by Dr. Skae. It is characterized by a morbid alteration in the normal state of woman towards the other sex. The patients are as a rule unattractive old maids about from forty to forty-five, who have led very strict and virtuous lives. The lady becomes seized with an absurd and reasonless passion for some particular individual of the opposite sex, very often her clergyman. She believes him to be deeply in love with her, or accuses him of seduction or other misdeed in connection with herself, and uses the merest trifles as proofs of her beliefs. Recovery is rare, the insanity often passing into some other form. Clouston says there is no proof that the ovaries are affected.

These morbid accusers are often maids approaching the menopause suffering from genital erethism and the neuro-ovarian involution of the dodging period, but they are not always unattractive old maids, as Tuke calls them, nor do they always display their erethistic morbid erotopathic suspicions towards clergymen. Lawyers, business men and doctors are often victims of their annoyance.

Married sexual erotopaths, male and female, sometimes get into the divorce courts, where their exacting, morbidly erotic demands on the time and attention of their bonded life partners appear in demands for unreasonable attentions and displays of profoundly jealous selfishness. Such cases are sometimes rebuked by courts and dismissed, when a lunatic asylum sentence for one or both of the parties would be the wisest disposition. Matrimonial infelicity is not so likely to result from two neuropaths joined together in abnormal holy wedlock, that is, where in the early period of matrimonial life, there are two of a kind. The result with them is usually mutual satisfaction for a time, with

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