BIO-ACCOUSTICAL STUDIES IN THE NATIONAL PARKS.

By C. H. HAAGNER, B.Sc. (Agric.)

At the Scientific Congress held on the 1st of December 1961, by the National Parks Board in Pretoria, it was decided to call into being an organisation to cater for the recording and study of wild life sounds, or Bio-accoustics as it is scientifically termed. This organisation falls within the framework of the Natoinal Parks Board. The object is to build up a library of recording tape carrying the natural sounds of our birds and animals. Amphibia, reptiles and insects could also be included.

These recordings will be of value for identification purposes and scientific study, as well as being of interest to nature lovers who do not have the opportunity of hearing all these calls in the field. They can be used for educational purposes in schools, and in the form of radio programmes should encourage greater interest in wild life preservation.

Such organisations have been operating in America and Europe for some time, but up to the present very little wildlife recording has been done in South Africa. What does exist, is mostly in the hands of a few amateurs, and for this reason, the formation of a National body to cataloque and store such recordings is very desirable.

Although final details are still to be worked out, field recording in the National Parks will be largely the responsibility of the writer, while publication of records will be effected by Mr. Hugh Tracey of the International Library of African Music. This organisation is producing an African Wild Life series of gramaphone records which are available to the public. Two discs on birds of the Kruger National Park have already been published, and their acceptance by the public has been gratifying; so much so that a second pressing had to be made within a month of their release.

How and where the tapes are to be cataloqued and stored is still to be finalised. A system similar to that employed by the Laboratory of Ornithology at Cornell University is envisaged. Here a Bio-accoustic organisation makes available material for scientific study and supplies recordings to educational institutions and broadcasting corporations. Anybody doing recordings in the field is encouraged to submit copies of their tapes and in this way their international library is constantly being expanded. It is hoped that an organisation based on similar lines will function in our own country.

Wild life recording can be a very satisfying hobby, for like photography, there is the challenge to approach perfection. Regardless of the quality of recordings in our possession the occasion for obtaining something still better always exists, for there are many and varied factors which determine the quality of any recording. First but formost, is the quality of the tape recorder and microphone. A large proportion of wild life sounds are in the high frequency range, and it is in the recording of these frequencies that most amateur tape recorders fail to reproduce with fidelity. But it is encouraging to note that constant improvement in the amateur recorder field is evident, so much so in some cases, that some amateur machines of today are superior to the professional machines of yesterday. We look forward therefore, to the time when reasonably priced recorders will be within the reach of many more interested parties.

The field tape recorder must be portable and must be independent of mains power supply. It is desirable that the microphone be of high output to enable a strong signal to be recorded without turning up the volume control of the recorder too much. Such a microphone should be of low impedance to enable long lines being used between the microphone and recorder when necessary. These microphones usually require their own seperate battery power supply. The microphone should also be of the best quality available for the recorder in use, just as a camera requires a good lens to produce sharp photographs.

The photographer uses a telephoto lens to simplify his wildlife photography. Fortunately we have the parabolic reflector to magnify the signal caught up by the microphone, but they do have their limitations. For all practical purposes, parabolic reflectors of managable size are only useful when recording sound of high frequency such as most bird calls. Low frequency sounds like the roar of a lion or leopard grunt have wave lengths much greater than the diameter of a portable reflector and are not amplified.

For this reason many animal calls are not easy to record because the microphone has to be located reasonably close to the animal in question. This holds particularly where the sound uttered is not loud. This coupled with the fact that animals usually call infrequently, indicates that any collection of their recordings will progress slowly.

Birds on the other hand sing comparatively often, and it is a fact that although most singing birds will fly away when closely approached, a less timid individual will eventually be found and with the aid of a parabolic reflector, good recordings are possible. Birds with loud strident calls are easy to record from some distance, but many of them make soft sounds necessitating a very close approach for an adequate recording.

It is the habit of the writer, when recording a particular species for the first time, to make the initial recording from a safe distance, even though the signal strength is not optimum, but sufficient for identification purposes, and then to make subsequent recordings from closer distances. More often

than not the bird either stops singing or flies away, but it is surprising how close one can sometimes approach. It is on these occasions that really fine recordings can be made, providing that environmental conditions are favourable. Good recordings cannot be made under windy conditions, and noisy insects buzzing around the microphone can be very annoying, but by far the most unwelcome disturbances are the mechanical sounds of civilisation.

Frog voices are very useful for identification purposes, for there are species which are very difficult to distinquish in the field until their calls are heard.

To conclude, the whole subject of bio-accoustics is still very new in South Africa, and it is hoped that in the 1963 issue of the "Koedoe" further progress will be reported, including a list of the species recorded to date. Anyone interested in, or having recordings of our wild life is urged to contact the writer through the National Parks Board.