POSSIBILITIES FOR THE ESTABLISHMENT OF A BIOLOGICAL STATION AT REELFOOT LAKE

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In order that the membership generally may become informed as to what is being accomplished through the Biological Station established and directed by the Tennessee Academy of Science at Reelfoot Lake, I have had the editor furnish me the list of titles of papers published during the past year, 1932, by workers who have made use of the Station. Without regard to arrangement of topics, or order of publications, the list is as follows:

1. Natural Enemies of the Wood Duck (Aix Sponsa).
2. Sand Blows in Lake and Obion Counties, Tennessee.
3. Reptilian Life at Reelfoot Lake.
4. Chemical Changes and Bacterial Relationships Involved in the Formation of Peat.
5. Feeding Habits of the Greater Scaup Duck (Marila Marila).
6. Relationship of Seasonal Rainfall to Water Stage at Reelfoot Lake.
7. The Effects of Water Stage on Wild Rice Growth in the Grassy Bend Sanctuary.
8. Further Observations on the Breeding Habits of the Crappie.
9. The Algae of West Tennessee.
10. Leaf Stem Borers of the Great American Lotus.

Our purpose in presenting to you this imaginary series of titles is to indicate briefly the scope of topics that might engage the activities of scientific men in a region that we believe is unexcelled in possibilities for outdoor research. Any one who has visited Reelfoot Lake could easily multiply the number of titles listed above many times. What is lacking in order to convert these imaginary papers into realities is a plan of organization and a simple physical station that will enable workers to gain access to the field.

In recent years the Tennessee Academy of Science has already had some very valuable papers presented to it, dealing with various phases of the conditions in and about this territory. The recent surveying and mapping of the region, the original and current actions of the State with reference to ownership and preserving it in its wild condition, have all served to direct attention to this particular and rather unique asset of the State. No doubt a goodly number of you have already visited it for one purpose or another. However,

in order to emphasize its potential scientific value, let us review for a moment a few interesting facts.

Its location is in the northwestern corner of the State, in Lake and Obion Counties. The lake and its immediate environs cover a territory approximately five miles wide and twelve or fifteen miles long, in area some sixty square miles. Its origin was due to the great Mississippi Valley earthquake, occurring in 1812-13. Due to the fact that the region is largely a mixture of swamp forest, marshes and snag-filled open water, it has been left comparatively intact until very recent years. Certainly through the past century, if not before, it has been the undisturbed home of nature's wild life, both plant and animal, protecting in its difficulty accessible confines the whole gamut of biological forms indigenous to the region, from Algae to the Angiosperms, from the Protozoa to the Mammals. On the east it is margined by the wooded bluffs of the Mississippi River, eroded from the great Tertiary deposits of the upper Embayment. It lies in the Quaternary deposits of the present flood plain of the great river which meanders in its mighty channel on the west. Lying in the borderland between the north and the south, at the very point, we might say, where the great upper tributaries of the Missippi Valley region are conjoining to form the lower river, its location is particularly significant. It is approximately midway between the Great Lakes and the Gulf, on the central axis of the valley lying between the Appalachian and Rocky Mountain Systems. Nature could not have conspired to produce a more ideal situation in the entire central area of the United States for the bringing together of Northern and Southern life forms, for the meeting of Eastern and Western fauna and flora.

We are not attempting to indicate nor outline the possibilities that exist here, but merely to suggest enough to mildly stimulate the imagination.

Up to the present time, excluding but not forgetting the very valuable scientific pioneer work already done by Purdue, Nelson, Ganier, Glenn and a few others, the only use made of this location has been the furnishing of a Mecca for sportsmen, not only from Tennessee, but from far-distant sections of the United States, and the development of commercial fishing by the descendants of the original settlers of the region. As a paradise for sportsmen it is doubtful whether there is any other one place in the whole United States that has furnished more consistently for so many years a greater amount of water sport to gun lovers than has Reelfoot Lake. Located as has just been indicated, it lies in the center of the great migratory pathway of the water birds between the Lake regions of the North woods and the Gulf of Mexico. Inherently attractive and suited to furnish their needs, it has proven to be an irresistible stopping place for the feathered millions during their semi-annual journeys. Its swamps, marshes and open water areas have enticed

every species of water and marsh bird that crosses the country. The wooded areas and adjacent uplands no doubt receive their full share of migratory species of other than water types.

But it is not only for bird lovers that we would emphasize the opportunities offered at Reelfoot Lake. We believe it would be an interesting place for visit, for research and study for the Entomologist, as well as for the Ornithologist, for the Ichthyologist and Herpetologist, for the Economic Zoologist, for the Mycologist and the general Botanist, and above all for the Ecologist. In fact there is not a major division in the whole science of Biology for which one would not find ample material within this domain for both intensive and extensive investigations. It would be a fertile field for Biological workers of every station, research men, college professors and their students, and independent investigators following up their own lines of work. It is one of the few spots in our country still left practically in its primeval condition, inheriting a rich endowment of wild life indigenous to itself, and because of its peculiar location drawing at times through the changing seasons the migrating forms of two continents.

While in our mind's eye we would see the opportunities existing for the establishment of a great and valuable Biological Station and Laboratory at Reelfoot Lake, attracting scientific men interested in this subject, not alone from Tennessee, but perhaps from far distant sections of America, it is not only to Biologists that this opened field would make its appeal. While the contacts of the biological sciences in general are wide enough to furnish activities to almost everyone in one way or another, there are specific opportunities at this location for the Organic Chemist, for the Physiographer and for the Geologist. Here can be found peat and lignite in the making. Effects of the earthquake are still discernible and need further study and interpretation. Even the Physicists and Meteorologists could find opportunities for applying and extending their knowledge. It is beyond us to enumerate in detail the directions scientific endeavor might take from such a centre, or to attempt to forecast in any way the value to the individuals, to the State, and to the Nation, of the results that could be produced. Our belief is that it could easily become a research and educational centre that would yield untold and unexpected results of both great practical and scientific value.

Our object is to lay before you a brief plan by which it would be possible for the Tennessee Academy of Science to make a simple beginning toward the fulfillment of this purpose.

The speaker's opportunities to visit Reelfoot Lake have come through the courtesy of a certain hunting club, and the suggestions which can be made for our purposes have arisen from the same opportunities. Some of these clubs have been established many years, and the memberships have solved the problems of housing, gaining access to and from, and upon the Lake. The primary necessities

are fairly simple and would be provided for in the erection of a plain dormitory of "camping-shack" type, with provision for cooking and eating in camping style. The remaining necessity is a boat or boats. With these primary essentials provided at the site of the opportunities, it would be possible for any member of this Academy, man or woman, to visit this region at any season and begin an acquaintance with its mammals, birds, reptiles, frogs or fishes, with its Protozoa or Protophyta, or its Gymnosperms or Angiosperms, as desired. The opportunity would exist.

Unlike the hunting lodges this station would house no shot guns or ammunition. But like the hunters, each visitor would bring his own personal equipment, field glasses, microscopes, bug nets and note books. As time went on and conditions developed, the varied equipment of a field laboratory could be added, and such additional facilities as necessity called for would gradually make their appearance. By degrees the usefulness and conveniences of the institution would be increased.

As to the exact location of such a station two things should be held in mind. Each is about equally important, as either might be a determining factor in the success or failure of the enterprise. The first of these is accessibility from without, and the second is easy accessibility to the greatest variety of conditions possible about the selected point. The reasons for meeting these conditions are obvious. It would seem at present that a location on the east shore not far from Samburg would best fill the requirements. The location with rights and privileges of use for educational and research purposes would have to be granted by the State. From what has been said so far in this connection, we are encouraged to believe the State will lend every aid possible to the Tennessee Academy of Science for the establishment of such a station.

We believe the use of such facilities as the Tennessee Academy of Science might establish for scientific purposes at Reelfoot Lake should be available not only to the members of this Academy but to properly accredited scientific men from this State and all other States. We would especially recommend that the scientific departments of the educational institutions of this State and other States, both faculty members and properly equipped students be permitted and encouraged to undertake and carry out desired investigations. All activities, of course, must at all times conform to the State's laws as pertaining to Reelfoot Lake, and to such rules and regulations as the committee of control from this Academy might see fit to set up.

As to the matter of financing the undertaking, you will observe, the simplicity of the necessary initial requirements. Not many hundreds of dollars would be necessary for the execution of this plan in its simplest form. Provided the State would assist by granting access to a desirable location for use by the Academy, it is believed

the necessary funds for a simple building and equipment could be secured by private gifts. Friends of the Academy and friends to the cause of Science could be interested in the undertaking. The process of advancing knowledge rarely has been in itself a money-making proposition for the participants. The results are indirect, but nevertheless definite. This fact is better understood and more widely appreciated today than ever before. For this reason it is easier to enlist the coöperative interest of those who are able to give in undertakings that seem at first to be purely of educational and scientific value.

If this suggestion, or any modification of it that seems wiser or better, meets the approval of the Academy at this time, there should be a committee appointed and given authority to take active steps toward accomplishing a start. Two purposes should be held in mind by such a committee at the outset; the effort should be made, first, to secure the necessary coöperation on the part of the State and, second, to enlist in a modest way the financial aid of friends. It is possible that the State might be interested more than in a merely passive way. By working out some coöperative plan in connection with the supervision of the Grassy Bend Sanctuary now established, both the purposes of the State, through the office of Game Warden, and the objects of this Academy, might be served.

The picture of the possibilities we have endeavored to present may seem dim and hazy to some, indefinite and difficult to accomplish to others, but, if so, we believe it is due to the shortcomings of the speaker rather than the project. Personally we believe that large things grow safer from small beginnings. It would be better to begin that way and hope for increased benefactions and greater aid as the real value and practical benefits to be gained become more widely appreciated. There is no doubt in the speaker's mind but that the undertaking could be properly started, and that the Tennessee Academy of Science should be the organization to make that start seems proper also. What better use than this could be made of this great natural and unique asset possessed by the people of Tennessee? To preserve it as Nature made it, to study it as a volume in Nature's great outdoor library, to watch more closely the actions and habits of her creatures, to read more deeply into the mysteries of life itself, are objects altogether worth while.

By such an undertaking this Academy could become a kinetic factor in the advancement of the cause of true science, and we believe an instrument for the transmitting of that science to the generations yet unborn.