cover that over our own building, which stood so solidly, with hardly a quiver from the wind, the roof was beginning to weaken. There was enough motion to start some of the joints, and several planks were noticeably loose.

Examination of the damage showed conclusively that it was not the force of the wind that alone caused the damage. Most of the buildings would have stood a considerably harder blow, if that was all. It was the continued motion that gradually loosened the joints and weakened the structures. It was the same with the trees. The motion pulled the roots up gradually, and after the storm many trees left standing were two or more inches higher at the base of the trunk than before. Often the roots at one side of the tree had been raised four to eight inches, letting the tree incline, but leaving it still solidly planted.

The storm was now practically over, but the wind, as closely as we could tell without instruments, was in the same direction. At the very center of the storm it was a straight blow, but we heard later that there had been a center of rotation a hundred miles or so west of the center of the storm, that at the center of rotation the damage was comparatively slight. If we look at the storm in the customary way, as a rotating mass of air, it is evident that some force must accelerate the air from nearly at rest to hurricane velocity and then almost stop it in each revolution. That must have been a great force, but what is its nature? How could a force be applied edgewise, that is, in a horizontal direction without causing the thin layer of air to buckle upwards? I will mention again that one of the most conspicuous features of the storm was its thinness, as indicated by the clouds, and not once did I notice a break in the uniform flow of light fleecy clouds. The traditional comparison with water flowing from a drain in the bottom of a wash basin was clearly not valid. A better comparison would be that of a thin layer of water, perhaps one-eighth inch thick, rotating at the bottom of the basin, while all the water above remained undisturbed, a thing which we never observe.

It appeared more like a mass of air from above, rolling down on the lower layers and squeezing them out. If that was the case, the observed rotation must have been only a secondary effect, an eddy at the side of the main storm, as it appeared to be. But if the wind velocity was the result of pressure from above, why the low barometer? Pressure would be expected to result in a high barometer. It suggests the familiar paradox of the flow of water in pipes, where reducing the size of pipe with a constant flow of water decreases the pressure also. It is the principle used in one form of vacuum pump, where, by making a hole in the side of the pipe where the diameter is smallest, suction is produced. Can a condition of this kind exist in the air, where a pressure from above is not transmitted to the ground, but acts in such a way as to reduce the size of the channel through which the air is flowing, with a resulting reduction in pressure?

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OHIO PRO-GLACIAL LAKES

IN 1908[1] and 1914,[2] the author published notes on lake beds in central Ohio. Four beds were called Finger Lakes of Ohio and described as well as possible, after the reconnaissance survey then made. One of these was reported to have tilted shorelines. Both the presence of the lakes and the tilt were discredited at the time by other workers and the author subsided, not because of any doubt about his findings, but because of lack of time in the pressure of other work to go over the field in a more thorough way. The recent gift of retirement from active teaching granted by the generous provision of Oberlin College has made the necessary time available, and during the past summer eight to nine weeks has been given to intensive field studies by the author, assisted by a graduate student.

During the last twenty-five years a lookout for more lake beds has been maintained, and the studies carried on this summer have covered ten abandoned lake beds; five or six more are known, and their study is booked for next summer. One of the ten examined was not wholly finished.

The findings have some considerable geomorphologic interest and a little economic value. Speaking of the possible resources first we can report that silts are found in all lake beds. Several deposits are being worked for the manufacture of tile and brick. Clays were also found in several lake beds, but in only one is any industrial use made of the clay. Gravels and sands as beach deposits are scarce and have little value, but three deltas, large for such lakes, are known; all are opened for road material. Specific shoreline features are usually wanting around the borders of the lakes.

Of value in studies in American epirogeny is the complete confirmation of tilting described twenty-four years ago in Lake Craigton. It is now known that Lake Craigton is much larger than was claimed in the preliminary survey and report, and that the tilting amounts to eighty feet in eighteen-nineteen miles along a N–S axis. This lake has three arms, one northwest toward Ashland, one north toward West Salem, and the third south toward Big Prairie. The north arm is lifted up more than the northwestern arm, hence the maximum tilt is up in the northeast. Two other lake beds have length enough in this direction to show tilting.

[1] *Am. Jour. Sci.*, 25: 239–243, 1908.

[2] SCIENCE, 39: 470, March 27, 1914; *Am. Jour. Sci.*, 37: 444–450, May, 1914.

Two of the lakes were held in on one side for a time by the continental ice, in one case for a time long enough to permit building of a large subaqueous moraine.

These lake beds are all 200 feet or more above the Maumee Beach of the proglacial lake in the Erie basin, and are in no way related to that lake. But their tilting carries the continental uplift thirty to forty miles farther south than the Maumee Beach and that much beyond any known tilt of the Great Lakes area.

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SUMMARY STATEMENT OF THE ACTIVITIES OF THE NATIONAL RESEARCH COUNCIL, 1937–1938

II

DENSITY CURRENTS

With the large number of power and storage reservoirs which have been constructed throughout the country in recent years a new problem of hydrodynamics has come to be recognized in the frequent occurrence in these reservoirs of streams or layers of water of a density or turbidity different from that of the surrounding body. The density of incoming waters varies with the salt content, with the temperature and with the burden of fine silt held in suspension. Currents of incoming water may move through a reservoir from entrance to exit without losing their identity by mixture with surrounding water. At other times turbulence causes a general or partial mixing. The problem consists of ascertaining the conditions which may cause or impede the general mixing of waters. It relates not only to waters in reservoirs and lakes but also to water at the confluence of rivers and to the meeting of fresh water with tide water. Among the practical applications of the problem are the determination of the quality of the waters impounded and likely to be delivered to the communities served by irrigation or urban water supply systems and estimates of the rate of filling of these reservoirs by the deposition of silt. An interdivisional committee has been appointed under the auspices of the Division of Geology and Geography to coordinate field observations which have been undertaken by several government agencies, including measurements in a number of reservoirs and natural lakes, such as Lake Mead on the Colorado River, Elephant Butte Reservoir in New Mexico, and several storage lakes in the Tennessee Valley.

RESEARCH IN PROBLEMS OF SEX

The Committee for Research in Problems of Sex has been enabled to continue its work for a period now of over sixteen years, supported by funds provided in the earlier years by Mr. John D. Rockefeller, Jr., and later by the Rockefeller Foundation. There seems to be no doubt that a large part of the advancement of knowledge that has been achieved in this field in the United States is due directly to the continued financial support with which the committee has been provided for this purpose and to the stimulating effect upon these researches which integration of interest within this field has effected. At the beginning of the committee's work, in 1922, the subject of the sex hormones was presented for special support because but little was then known concerning hormones in general or the sex hormones in particular. This subject later became a major part of the committee's program. With the large expansion of the field of endocrinology, however, the committee has turned its resources to the neuro-physiological and psychobiological problems of sex under the policy of applying its resources to the less well-developed aspects of the general subject rather than to those in which strong momentum has been acquired. Moreover, the support of a number of investigations initiated by the committee has been taken over by other agencies, giving the committee latitude for the development of new projects. The committee is able to give support to the work of fifteen or twenty collaborators annually, who are located at strong centers about the country for physiological and psychological research.

ENDOCRINOLOGY

A program similar to that for research in problems of sex was set up last year for research in the general field of endocrinology, with attention to the more general metabolic processes, and the relationships of endocrine secretions to aging and to tumorous growths and other hormonal influences. The program is carried on with the cooperation of over twenty-five collaborators in various institutions. It was selected for support by the John and Mary R. Markle Foundation, after careful study of many opportunities, as one of the most useful fields of science to which the Foundation might give aid.

NARCOTICS RESEARCH

The Committee on Drug Addiction, which is concerned with investigations upon the chemistry and