

Research in improving communication between the universities and government research establishments. A new commercial but selective scheme for micro-filming dissertations is briefly described, which could be adapted to meet the requirements of individual universities and eliminates the need to charge a microfilming fee.

### Computer Training Centre

BRADENHAM MANOR, the property of the National Trust, has been leased to the British Tabulating Machine Co., Ltd., for use as a Hollerith Computer Training Centre. On July 24 the Centre was opened by Lord Halsbury, managing director of the National Research Development Council, who said that the old idea that a trainee learnt his job by copying what his predecessor could be seen to be doing has no room in the field of computer training. Training on modern, almost academic, lines is what is required and such training the Bradenham centre would provide. Some 3,000 people per annum undergo training in the use and applications of mechanized accounting equipment at the five educational and training establishments maintained by the British Tabulating Machine Company's resources. Other facilities will become available as the result of the proposed merger with Powers-Samas.

### Rugby School Natural History Society

P. R. M. Pattisson, a scholar at Rugby, has carried out experiments to determine the reactions of *Gammarus* sp. to water currents. The apparatus consisted of a double horseshoe-shaped trough about 7 ft. long, containing water circulated by a paddle-wheel. The water was about  $\frac{1}{2}$  in. deep. The speed just above the bottom was measured by timing the movement of a small piece of pumice-stone weighted with 'Plasticene' over a measured distance. Experiments were carried out in the clear straight side of the trough which was marked off in inches and showed that the swimming speed increases linearly with the current. While swimming, *Gammarus* is able to gain ground for any current speed. The rate of increase in swimming speed is less than the corresponding increase in current; the animal gains ground more slowly at the higher current speeds. The respiration of *Tubifex* and *Culex* sp. has been investigated by A. M. Roberts, another scholar at Rugby. The Report for 1957 (Report of the Rugby School Natural History Society for the year 1957. Pp. 28+1 plate. (Ninety-first issue.) Rugby: Rugby School Natural History Society, 1958) contains details of these two investigations as well as reports of all the many sections affiliated to the Society. Their activities do credit to scholars and staff.

### Circulation in the Black Sea

It is usually assumed that the Black Sea in its deeper part (below 200 m.) consists of stagnant foetid waters rich in hydrogen sulphide. This led to a suggestion that the Black Sea may be utilized as a depository for the atomic waste. Arguments showing the erroneous conception of 'buried' bottom waters of the Black Sea are brought forward by V. A. Vodyanitzky (*Priroda*, 2, 46; 1958), who presents strong evidence in favour of the existence of convexion currents producing a vertical circulation of the waters of the Black Sea.

### Geological Age

EDUARD SUESS in his "Face of the Earth" postulated the existence of "the most ancient vertex of the Eurasian folds" occupying the mountain-crescent fringing Lake Baikal in the south. This vertex, formed by folded mountains of the Pre-Cambrian age, fringes the southern border of the stable "Augara Land". As outlined by V. T. Mordovsky (*Priroda*, 3, 85; 1958), this conception, based on the original works of I. D. Chersky and V. A. Obruchev, must be completely reconsidered in the light of subsequent interpretations carried out by L. de Launay, M. M. Tetiaev, A. N. Churakov and N. S. Shatsky. According to the Tectonic Map of the U.S.S.R. edited by Shatsky and published in 1957, the exposed portions of the Pre-Cambrian 'Augara Land' are exposed only in the Anabar, Sayan and Aldan massifs, while its remaining parts are covered by later stratified unfolded deposits. At the same time, the greater part of the area of the alleged "ancient vertex" must be considered to be formed by rocks folded during the Baikalian orogenesis (Early Cambrian to late Proterozoic) and Caledonian orogenesis (late Palaeozoic). "Thus", writes Mordovsky, "the ancient vertex of Asia, as understood by Chersky, Obruchev and Suess, does not exist. The Siberian Platform, together with the Anabar massif and the Aldan shield, is one of the most ancient areas in the northern Asia".

### Root-Shoot Relationships

THE effect of removing part of the root system on the subsequent growth of the root and shoot systems has been investigated by E. C. Humphries (*Annals of Botany*, N.S., 22, 251; 1958). When some 50 per cent of the roots of barley and rye were removed, the growth-rate of the remaining roots was the same in intact plants; but the growth-rate of the shoot decreased progressively as more and more roots were removed. When the number of roots removed exceeded 50 per cent, there was a decline in the rate of root growth, though this was less marked than that of the shoot. Comparable results were obtained in experiments in which the lateral roots of tomatoes were removed; but in this species a 40 per cent removal of laterals was critical for maintenance of growth in the remaining root system. The author also reports that the uptake of potassium, in barley plants with parts of the root system removed, was closely proportional to the increase in dry-matter when the nutrient supply is not limiting; but, with low nutrient supply, the potassium uptake was less than the dry-matter increase.

### Auxins in Bean Embryo Development

M. Furuya and K. Soma have contributed some interesting new observations on the effects of various auxins on the development of bean (*Phaseolus vulgaris*) embryos grown *in vitro* (*J. Fac. Sci. Univ. Tokyo*, Sect. 3, 7, 163; 1957). Dormant embryos were removed from the cotyledons and cultured either intact, or as four separate regions or segments, namely, the apical portion, including the first foliage leaves, the hypocotyl, the short basal transitional region, and the radicle. White's solution, with the vitamins omitted, was used, together with individual additions of  $\beta$ -indolylacetic acid, sodium 2,4-dichlorophenoxyacetate (2,4-D) and sodium  $\alpha$ -naphthylacetate at different concentrations ( $10^{-3}$ - $10^{-11}$  mole