that after a period of quiescence of some centuries the great volcano Popocatapetl had again become active in 1920, and that its activity still continued.

During the last decade evidence that great volcanic disturbances had taken place at long intervals has been forthcoming. Two distinct types of figurines have been found in conditions which indicate that the topography of the valley has been changed and its inhabitants destroyed by great catastrophes antedating the arrival of the Nahuas or Aztecs.

Of these figurines the first, provisionally distinguished as the sub-gravel type, was brought to Mrs. Nuttall's notice in 1920, when specimens were offered for sale by Indians, and she herself discovered an example *in situ* under a gravel bed at Atzacapotzalco. They were delicately fashioned of fine clay, with slender bodies, long faces, smooth-hanging hair, some wearing chaplets. All presented a worn and polished surface. In the Valley of Mexico the gravel beds extend under the lava flow at the base of the extinct volcano Ausco.

Under the lava bed, to which Dr. Tempest Anderson assigns an age of at least 20,000 years, Mrs. Nuttall in 1908, and afterwards Senor Gamio, head of the Department of Archeology of Mexico, have discovered a second type of figurine, to which the name "sub-lava type" has been given. This type is characterised by turbans and caps, evidently of fine stuffs or fur, and decorated with circular ornaments of stone or shell. They indicate that the southern part of the valley was inhabited by a race totally distinct from that of the "sub-gravel type" and the Aztec. The distribution of the clay figurines is now under investigation. They have been traced as far as Guatemala.

Mrs. Nuttall also described the results of recent excavations at Teotihuacan, during which a small pyramid was opened up and reconstructed by Senor Gamio. A tunnel pierced at the height of 35 feet to the center of the pyramid revealed that it had been formed of mud filled with innumerable fragments of pottery vessels which had prevented the mud from cracking when it baked in the sun. A remarkable discovery was that of the remains of the ancient pyramid temple with a wonderful sculptured frieze which had been partly destroyed and then concealed by another terraced pyramid temple built in front. The sculptured serpents' heads and the masks of the water-god Tlaloc are of a form hitherto unknown. Associated with them are sculptured shells, principally the conch shell and the pecten or pearl shell. Not only is it remarkable that sea-shells should be represented in sculpture in the heart of the continent, but the association of the water-god with the ocean is entirely new.

In the discussion which followed Mrs. Nuttall's paper, Mr. Maudslay expressed the hope that it might be possible before long, by the elaboration of a system of stratification, to date Mexican antiquities. As Mexico appeared to have been untouched by outside influence, the study of its antiquities afforded evidence of the highest value for the study of the development of the human mind acting by itself. Mr. T. A. Joyce emphasized the importance of the evidence relating to the figurines, and pointed out that the British Museum had acquired a figurine of similar technique from Ecuador. Professor Eliot Smith expressed the opinion that, contrary to what had been stated by Mr. Maudslay, Mexican antiquities showed clear evidence of influence from outside and in particular from Asia. Mrs. Nuttall's work showed that this culture must have crossed the Pacific.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND

THE council of the Royal Agricultural Society of England has, as reported in the London *Times*, unanimously adopted a report from the chemical committee of the society, which had been instructed "to consider in what way, in view of the altered circumstances, the scientific side of the society might be developed." The council afterwards appointed the following research committee to carry out the research proposals made by the chemical committee:

The Duke of Devonshire, Lord Bledisloe, Professor W. Somerville, D.Sc. (Oxford), Mr. Dampier Whetham, F.R.S. (Cambridge), Mr. Henry Overman, and Mr. John Evens, with Mr. Charles Adeane (chairman of the finance

committee), Mr. J. L. Luddington (chairman of the chemical committee) and Mr. C. Coltman-Rogers (chairman of the botanical committee) as *ex officio* members.

The chemical committee recommended that the society should form a fund definitely reserved for research, into which payments should be made as funds allow. The following paragraphs summarize their proposals:

(*a*) That the results of the past experimental work of the society should be collated, abstracted and published.

(*b*) That the society should continue to devote part of its scientific energies to agricultural research, and should at once establish a separate fund for its support.

(*c*) That members of the society be invited to make suggestions as regards practical problems which they consider require experimental investigation.

(*d*) That members of the society be invited to cooperate, by the provision of land, stock, etc., in carrying out such work.

(*e*) That scientific institutions as occasion arises be asked to aid the society in the elucidation of problems that can not be dealt with on an ordinary farm.

(*f*) That a research committee of eight members be set up, to review proposals and to initiate and supervise experiments.

(*g*) That the research committee should submit to the council in November estimates for the forthcoming year's work, and in March a report on, and the audited accounts for, the work of the last year.

(*h*) That arrangement be made at once for the publication of past experimental results, and that experiments be initiated as soon as possible.

The committee points out that the society has successfully undertaken a large amount of valuable and varied experimental work, not only at Woburn, but elsewhere, and results of much service to agriculture have thereby been secured. The work has included the manuring of crops and grass, green manuring, sowing down land to grass, the quality of seeds, finger and toe in turnips, the treatment of farmyard manure, cheese making, the fattening of cattle, sheep and pigs, and the rearing of calves. The results are reported in the *Journal,* but, although available, are not convenient of access. The committee believes that farmers and students would benefit greatly if the society would issue, in at least two volumes, one dealing with crops and the other with stock, the experimental results it has achieved. A substantial fee would have to be paid for the work, but there should be no difficulty in finding a firm who would relieve the society of any financial responsibility in respect of publication.

The committee holds that further experimental work is vital to the interests of the society. For "research without reference to utilitarian ends" the society is not fitted, either in respect to technical equipment or of personnel; but it is eminently quality to undertake research which deals directly with problems that arise in practice. Its members consist largely of practical farmers with long experience of the land and of the difficulties and problems of its cultivation.

At the moment the committee suggests that the following questions might well engage the society's attention:

(*a*) The value of ground mineral phosphates, more particularly in the improvement of pasture.

(*b*) The use of various forms of lime on grass and tillage crops.

(*c*) The use of wild white clover, wild red clover, bird's foot trefoil, etc., in laying land down to grass.

(*d*) The profitable utilization of whey.

MOLDING SANDS

THE Committee on Molding Sand Research under the guidance of Division of Engineering, National Research Council, and the American Foundrymen's Association, has made progress in its program of research. The United States Geological Survey and the various state geological surveys have promised to cooperate with the sub-committee dealing with this phase of the work under the chairmanship of Professor H. Ries, of Cornell University. This subcommittee has prepared a letter of instructions to the state geological surveys, which will standardize methods of making the surveys of molding sand resources.

Work on standardization of tests is well under way. Questionnaires have been sent out to gather information on the present methods of testing physical properties of sand. A