

National Science Foundation Fellowships for 1958-59

THE National Science Foundation, Washington, D.C., has announced the award of 756 pre-doctoral graduate fellowships and 85 regular post-doctoral fellowships in the natural sciences and allied fields for the academic year 1958-59. Of the former, 186 awards were made to first-year students, 374 awards were made to students in the intermediate years, and 196 awards to those in their last year. The largest group of pre-doctoral fellowships, 178, was awarded in physics. In other fields the numbers of awards were: chemistry 158, engineering sciences 93, mathematical sciences 92, zoology 54, earth sciences 45, biochemistry 29, psychology 21, medical sciences 12, botany 12, genetics 12, anthropology 9, microbiology 8, biophysics 8, agriculture 5, astronomy 5, general biology 5. In addition, 10 awards were made in areas where the natural sciences converge with the social sciences. Of the regular post-doctoral awards, 32 were made in the life sciences, 18 in chemistry, 18 in physics and astronomy, 11 in the mathematical sciences, 2 in the earth sciences, 1 in the engineering sciences, and 3 in areas where the natural sciences converge with the social sciences. The awards are tenable at any accredited non-profit-making educational institution of higher learning in the United States or abroad. Pre-doctoral fellowships are worth 1,600 dollars for the first year, 1,800 dollars for intermediate years, and 2,000 dollars for the last year of study. Regular post-doctoral fellowships carry a stipend of 3,800 dollars. All fellowships include additional allowances for dependants, tuition, and other normal expenses.

A Palaeolithic Site in Pretoria

AMONG a number of articles, reviews and correspondence in the December 1957 issue of the *South African Journal of Science* is one by Revel Mason on an early stone age (Later African Chelles-Acheul) site at Wonderboom South, Pretoria, on the southern slopes of the Megaliesberg. Unfortunately there is no fauna, and the age has to be settled on typological and technological grounds only. There is a very large number of artefacts, and the site seems to have been selected for considerations of hunting, as it commands one of the few gaps through the eighty-mile-long range. Just as the cave of Castillo in northern Spain owes its continuous use by prehistoric man to the hot springs which bubble up near by, which animals love, so a concentration of game at the few gaps over the Megaliesberg made hunting an easy matter.

Phenobarbitone Therapy in Epilepsy

SINCE 1912 the use of phenobarbitone as an anti-convulsant in cases of epilepsy has been widespread. In a recent issue of *The Lancet* (March 22) Dr. D. C. J. O'Connor presents some striking results obtained with a new preparation ('Spansules'; Smith, Kline and French Laboratories), consisting of coated granules from which the drug is stated to be released at a uniform rate in the body. Eighteen psychotic epileptic patients who had previously been receiving phenobarbitone in solution or tablet form (together with phenytoin and primidone in some instances) were given 'Spansule' phenobarbitone. Over a period of eighteen months, the incidence of convulsions was reduced from a high level virtually to zero, and the mental state of the patients was considerably improved.

Unfortunately, many objections can be raised, which to all intents and purposes nullify the value of the results obtained; some of these objections have been stated in subsequent correspondence in the same journal. As Dr. J. Penman points out (*Lancet*, March 29), eighteen is too small a number of cases, and the test should have been planned in the form of a double-blind controlled clinical trial with advice from a statistician. Furthermore, although the form of phenobarbitone therapy was changed, the phenytoin and primidone regimens were continued and the dosage of phenytoin in some cases increased, thereby introducing additional variables. In a further comment, Dr. D. Pirrie (*Lancet*, March 29) observes that the total amount of phenobarbitone administered to the patients was doubled during the experimental period (from 2.8 to 5.6 gr. daily) and that an essential control study using twice the amount of ordinary phenobarbitone was not undertaken. In a later letter (*Lancet*, April 19) Dr. J. W. Pearson notes that Butler *et al.* (*J. Pharmacol.*, 111, 425; 1954) found that there was no significant difference in blood phenobarbitone-levels when divided doses of ordinary phenobarbitone were given and when the same total amount of drug was administered in 'Spansule' form. It is therefore unlikely that Dr. O'Connor's results are due to the maintenance of a constant level of phenobarbitone in the blood. In conclusion, it should perhaps be stated that the improved mental condition of the patients is more likely to be accounted for by the reduction in the frequency of fits than the lower toxicity of 'Spansule' phenobarbitone. It is also well known that mental patients receiving continuous attention from medical and nursing staff almost invariably improve.

A New Species of *Protopytis*

J. WALTON has described a fertile shoot of a new species of *Protopytis*, under the name of *P. scotica*, from the Calciferous Sandstone Series of Dumbartonshire (*Trans. Roy. Soc. Edin.*, 63, 233; 1957). This material has furnished the first available information on the reproductive structures of what has hitherto been regarded by most investigators of fossil plants as probably a genus of Pteridosperms. The new evidence relating to the reproductive structures, however, is more suggestive of a pteridophytic affinity. Moreover, the range in spore size suggests that a trend towards heterospory, with megaspores and microspores, was in progress. The author has accordingly proposed that a new group of Pteridophyta, the Protopytiales, be established to include *Protopytis*.

International Federation of Automatic Control

THE constitution of the International Federation of Automatic Control, which was founded in Paris in September 1957, has now been ratified by the national organizations of the following twelve nations, which have thus become members of the Federation: China, Czechoslovakia, Denmark, Italy, Japan, Norway, Poland, Roumania, Sweden, Switzerland, the United States and the U.S.S.R. Prof. E. Gerecke (Zurich) has been appointed treasurer. It is proposed to form technical committees on bibliography, on nomenclature, symbols and definitions, and on educational questions. These technical committees will be combined into three main committees of the International Federation, namely, on automatic control theory, on components and measurements, and on the application of automatic control.