

the production of penicillin; and on 'Loungin', a flavouring agent which has twenty times the strength of vanillin. Besides brief notes on progress in the various research schemes, arranged under some thirty project headings, the report includes notes on X-ray, instrumentation and physico-chemical studies, analytical work, equipment and machinery, as well as a list of publications and patents, colloquia held during the year, and lists of research staff, Executive Council and Scientific Advisory Committee. Somewhat fuller details are given of the castor-oil project, which embraces the refining of the oil, the preparation of triricinolein, using hexane as solvent, the hydrogenation of castor-oil and the preparation of surfactants, the cotton-seed project (including refining, storage, pilot-plant processing and hydrogenation to fatty acids), the fatty acids project, the dehydrated castor-oil project, entomological studies on insecticides, the hand-made paper project, the utilization of the products of low-temperature carbonization of coal (including the preparation of pitch and road tar, preparation of creosotes for wood preservation, recovery of motor spirit, recovery and fractionation of tar acids and their chemical examination) and the glass and ceramics development project.

#### Fencing Posts in Australia

MILLIONS of miles of fences divide and subdivide grazing and farm lands in Australia. Their construction, replacement, and maintenance form a major cost item for primary producers. A survey carried out a few years ago by the Commonwealth Scientific and Industrial Research Organization Division of Forest Products, with the assistance of the State Departments of Agriculture, gathered essential information on materials, methods, costs, fence-life, and causes of failure of fences on hundreds of farms across the country (Rural Research in C.S.I.R.O., 27: Melbourne, March 1959). Much of the cost is in the posts, and years earlier the Division had begun testing small, round, wooden posts to see if they would be suitable. After some thirty years trial they proved to be efficient if preserved against decay and insect attack by treatment with creosote. An alternative method of treatment using water-soluble preservatives has been developed more recently. The Postmaster-General's Department has adopted full-length preservative treatment for its telegraph poles and, as a consequence, expects an average saving of £2 million a year over the next forty years. This figure shows the savings that could be made if all farmers used round preserved posts for their fencing requirements. Those who are already using such posts have considerably altered their outlook on fencing. An important step in reducing fencing costs has been made. Other aspects, such as design, have been neglected and appear to offer fruitful fields for research.

#### Inflorescence Inception and Leaf Size in Gramineae

M. BORBILL, in a study of the successive leaves on the flowering shoots of *Glyceria*, *Lolium* and *Triticum*, has observed that the blades of successive leaves were progressively longer, eventually reaching a maximum, after which the blades of the last few leaves produced before heading were shorter. When the longest leaf blade was elongating, dissection of the shoot apices showed that inflorescence initiation was taking place. Epidermal cell measurements in *Triticum* indicate that differences in blade length are due to

differences in the amount of cell extension. It appears that a correlated change occurs in blade morphology associated with the onset of the reproductive state of the shoot apex, brought about through changes in the amount of cell extension. A study of the effect of different amounts of low temperature and different day-lengths on the relation between inflorescence inception and the production of the longest leaf blade showed that, under some conditions, this relation can be disturbed (*Annals of Botany*, N.S., 23, 217 (1959)).

#### Belgian Oligocene Foraminifera

THE second of a series of studies on the Belgian Palaeogene by a team of micropalaeontologists at the University of Utrecht consists of a memoir by D. A. J. Batjes on "Foraminifera of the Oligocene of Belgium" (Institut Royal des Sciences Naturelles de Belgique. Mémoire No. 143: Pp. 188+13 plates. Bruxelles: 1958). Hitherto very little was known about them, although the Belgian Oligocene includes the type areas of the Tongrian and Rupelian divisions. The samples investigated were collected both from surface outcrops and from borings and mineshafts, so that essentially the whole Oligocene was covered. Further, some German and Dutch Oligocene and Belgian and German Miocene deposits were examined. Altogether some 140 species (of which two are new) are described, all, with the exception of *Nummulites germanicus* (Bornemann), belonging to the smaller foraminifera. The author considers that some eight may be index-fossils for the Oligocene, or in any event for the Boom Clay and Septaria-clay. One, *Cassidulina carapitana* Hedberg, widely distributed in the Tertiary of the Caribbean-Antillean area, is described for the first time from Europe. The faunal assemblages have close affinities for much of Oligocene time with those of north-western Europe and not with those of areas farther south. Dr. Batjes also made detailed observations on the lithology and lateral variation of the deposits in different parts of Belgium. Correlating these with the foraminiferal assemblages, he is led to postulate that parts of the Tongrian and Rupelian deposits are of the same age, and that similar relations may exist between the Rupelian and Chattian.

#### A Reinterpretation of Charnockites

SINCE the publication of Sir Thomas Holland's classic memoir on the charnockite series of peninsular India nearly sixty years ago, similar rocks have been discovered and studied in many parts of the world, and various theories of their origin have been put forward without, however, a thorough knowledge of the type area near Madras from which these rocks were first recorded. A detailed re-examination of the rocks of this area has been made by A. P. Subramaniam (*Amer. J. Sci.*, 257, 321, May 1959). Mineralogical, petrographical, and chemical data are presented which indicate that Holland's "Charnockite Series" in fact contains members which are genetically unrelated to one another. Charnockite is re-defined as a hypersthene-quartz-felspar rock with or without garnet, characterized by greenish-blue feldspars and greyish-blue quartz. The term 'charnockitic suite' is suggested for a group of related alaskites, charnockites (birkremite), enderbites, and hypersthene-quartz syenites, all of which are partly garnetiferous. This series corresponds to the "Acid" division of Holland's "Charnockite Series". The "Intermediate" division of Holland consists of an assemblage of hybrid rocks