

is bound to involve losses in marginal projects, such as those the Corporation necessarily undertakes, and that pressure on Colonial economies has already adversely affected projects which are not themselves primary producers.

#### International Council of Scientific Unions

THE Year Book of the International Council of Scientific Unions of 1958 (pp. ii+74. The Hague: International Council of Scientific Unions, 1958) includes a three-page report, from the Secretary-General, for 1956-57, which records the decision to accept an offer of the Netherlands Government, through the Royal Netherlands Academy of Sciences, to provide a permanent home for the secretariat in the former Royal Palace, Noordeinde, The Hague, and transfer was commenced towards the end of the year. The proposal to publish a quarterly review containing descriptive articles of high standard and details of the current activities of the Unions has been approved by the Executive Board, which has also approved the creation of a Special Committee on Antarctic Research to consider further international organization of scientific activity in Antarctica. Active work in the field of biological abstracting has been organized and at the eighth General Assembly of the Council, to be held at Washington during September 26-October 7, the Executive Board will recommend classification of the International Geographical Union as a General Union. The Year Book is also a work of reference on the Council and the Unions, including lists of members of the Bureau, the Executive Board and the Council, joint commissions, special committees and other organs and of officers of the International Scientific Unions (together with an alphabetical list).

#### South African Journal of Agricultural Science

THE first issue of a new journal devoted to agricultural science in South Africa has recently reached *Nature* office (*South African Journal of Agricultural Science*, 1, No. 1; March 1958. Pp. 108. Pretoria: Government Printer, 1958. 7s. 6d.). It is evidently designed to cover a wide field, and the six papers in the first issue are concerned with a fungal disease of muskmelon, a disease of citrus caused by mites, the effect on the Argentine ant of application to the soil of chlorinated hydrocarbons, the influence of lime and phosphate on the growth and uptake of blue-bitter lupin, trials of rootstocks for grapefruit, and studies on the biochemistry of cock semen. The papers are in either English or Afrikaans with bilingual titles, and the legends to figures and tables are also in both languages. The summaries are in English, Afrikaans and French. All the papers are of a high standard and the journal is well produced, with some of the plates in colour. This journal will no doubt prove of great value to agricultural scientists in South Africa as a convenient and speedy means of communicating the results of their research.

#### African Zoological Types

THE South African Museums Association has recently published "A List of Zoological and Botanical Types preserved in Collections in Southern and East Africa" (1: Zoology, Part 1. Pp. v+147. Pretoria: South African Museums Association, 1958. Obtainable from the Director, Transvaal Museum, Pretoria. 7s. 6d.). Its title is self-explanatory: it includes all the types published in the literature up to the end

of 1955 that have been traced. The total number is about 5,000, distributed among nineteen institutions and nine private collections. It is to be hoped that provision has been made for the latter to find their way into public institutions, where their accessibility and preservation can be assured. The list does not contain the types of the Karroo reptiles, as these have already been dealt with by Houghton and Brink. The arrangement of phyla, classes and orders follows that in "The Zoological Record", but for convenience in reference, families, species, subspecies and varieties have been arranged alphabetically.

#### Upper Atmosphere Research in the United States

IN Upper Atmosphere Research Report No. 32, February 21, 1958, the U.S. Naval Research Laboratory has given a history of its rocket research programme since 1946 (pp. ii+47. Washington, D.C.: Naval Research Laboratory, 1958. Distributed by U.S. Department of Commerce, Office of Technical Services). Some idea of the extent and scope of the work is indicated by a list of more than 300 publications from the Naval Research Laboratory during this period. The report is a summary of the work carried out and the data obtained from 104 rocket flights. In addition to the scientific data obtained, the instrumentation developed has found application to problems other than upper atmosphere research. Measurements have been made involving the atmosphere, ionosphere, solar and stellar radiation, cosmic rays, air-glow of the night sky, and the Earth's magnetic field. The results achieved are impressive in quality and quantity, although measurements of this type have sometimes revealed inconsistencies indicating the need for further study. An important contribution has undoubtedly been the development of techniques of measurement to an advanced stage, giving reliable operation of measuring instruments in the rocket environment. Of the results obtained, a few examples will illustrate the value of the work. It has been shown that the daytime ionosphere appears to remain dense between the  $E_1$  and  $F_2$  regions, in disagreement with theories suggesting that it is stratified; the  $F_2$  region is much more constant in altitude and lower than previously suggested by ground observations. Measurements with mass spectrometers have given information on the positive- and negative-ion composition of the upper atmosphere, negative ions not being detected on the night flight (115 km.) and positive ions not detected on the day flight (131 km.). The ultra-violet spectrum of the Sun has been studied out to 977 Å, a bright emission-line spectrum being photographed in the far ultra-violet. In addition, information has been obtained on the emission of X-radiation. Corrections have been made to the solar constant, resulting in the now generally accepted value of 2.0 cal./min./cm.<sup>2</sup>. In the northern auroral zone a high intensity of relatively low-energy particles has been detected; these are not protons or heavier particles.

#### Electronic Temperatures of Planetary Nebulae

HENRI ANDRILLAT, of the Observatory at Lyons, has a paper entitled "Les températures électroniques des nébuleuses planétaires" in *Publication de l'Observatoire de Haute-Provence* (3, No. 35; 1957), in which he gives the results of his work on planetary nebulae observable with the 120-cm. telescope at Haute-