

appearing to have undergone an acceleration of rate, and a retardation in the period of rotation of the earth was suspected. In subsequent years, as more clocks became available, the same phenomenon was in evidence, but it was not until the spring of 1949 that a definite retardation among a number of clocks was noticed. The suspicion of a seasonal fluctuation in the earth's period of rotation led to an examination of the final corrections to the times of emission of the Rugby time signals which are under the control of the Greenwich Time Service, and a full account of the investigations and the conclusions is given in Finch's paper.

It appears that there is a variation of the order 0.001 sec. and an accumulative effect in time of approximately 0.060 sec. Similar results were obtained by N. Stoyko², who published his investigations during 1936-37, but his work did not receive much attention at the time. An attempt to account for the phenomena of the slowing of the earth in spring and of its acceleration in the autumn was made by van den Dungen, Cox and van Mieghem³, who used observations of the barometric pressure over the surface of the earth at different seasons. They showed that the effect could be accounted for in part by changes in the earth's moment of inertia due to seasonal changes in the distribution of air masses, but owing to incomplete data further investigation is required.

It may be pointed out that Chapter 5 of "The Atmospheres of the Earth and Planets", edited by Prof. G. P. Kuiper, deals with the work of Whipple, Jacchia and Kopal on seasonal changes in the upper regions of the atmosphere. The whole upper atmosphere at a height of about 78 km. appears to rise in spring by 8 or 9 km. and to drop again by the same amount in the autumn. No reference is made in Finch's paper to this phenomenon, which may have to be taken into account in future explanations of the seasonal changes in the earth's rate of rotation. The fluctuation of approximately annual period in the mean longitude of the moon, deduced from occultation observations, is much too large to be explained by the variations in the rotation of the earth.

¹ *Mon. Not. Roy. Astro. Soc.*, **110**, 1 (1950).

² *C.R. Acad., Paris*, **203**, 39 (1936); **205**, 79 (1937).

³ *Bul. Cl. Sci. Acad. roy. Belgique*, **5**, Series 35 (1949).

PACIFIC SCIENCE BOARD

ANNUAL REPORT FOR 1949

THE third annual report of the Pacific Science Board, covering the year 1949*, reviews briefly the work of the Seventh Pacific Science Congress, which was convened at Auckland and Christchurch during February 2-22, 1949; the Congress was attended by representatives of twenty-four countries, and more than five hundred papers were presented. Plans are now well advanced for the publication of the proceedings of the Congress, and the present report lists some articles describing the work of the Congress in general or in specific fields.

The Co-ordinated Investigation of Micronesian Anthropology programme consisted largely of continuing work by the participants on their final reports,

* Pacific Science Board. Third Annual Report, 1949. Pp. 154. (Washington, D.C.: National Research Council, 1950.)

of which twenty-six have now been accepted by the Board. The titles of these are listed in the report of the Board, and the reports are expected to be published by the sponsoring institutions or in appropriate scientific journals. The proposal to appoint three anthropologists to the staffs of the civil administrators in the Palau, Truk and Marshall Islands could not be implemented in 1949; but five anthropologists are already used by the United States Navy in its Civil Administration Units in the Trust Territory. The programme was extended in March 1949 to include other fields of science and is known as Scientific Investigations in Micronesia. Ten participants were appointed to carry out field work in the Trust Territory in anthropology, linguistics, botany and zoology.

The Insect Control Committee for Micronesia has sponsored a detailed study of *Achatina fulica* in various islands in the Trust Territory with the view of determining the variation in populations, extent of damage to crops, local predators, etc., and has sent a technician to investigate the possibility of processing it for human or animal food. Reports have been received that the wasp, *Scolia ruficornis*, that preys on the rhinoceros beetle (*Oryctes rhinoceros*) has become well established in western Samoa. Under the Conservation Committee for Micronesia, problems of the trochus shell (*Trochus niloticus*) fishery and of the robber or coconut crab (*Birgus latro*) have been investigated, as well as the damage to water supply and agricultural land resulting from mining operations on Angaur in the Palaus.

As a result of a report by Dr. C. J. Fish with Mary C. Cobb on "Noxious Marine Animals of the Central and Western Pacific", the Pacific Science Board has been requested by the United States Office of Naval Research to consider the preparation of a handbook that could be used by those stationed in the area on poisonous and otherwise dangerous animals in the Central and Western Pacific. Prospects for the realization of the high purpose of furthering scientific research in the Pacific through the agency of the Pacific War Memorial, which was established as a scientific foundation dedicated as a living memorial to those who served with the Armed Forces of the United States in the Pacific, depend on the availability of substantial support which has not yet materialized. Details of the Fulbright programme are included in the report, as well as a summary of the initial programme of the South Pacific Research Council for 1949-50.

Field projects approved by the Board include a Pilot Nutrition Study in Micronesia, with special reference to children, a mid-Pacific oceanographic project, a serological survey of the Pacific area, an anthropological and ethnographical study of the Southern Rynkyn Islands, a botanical study of New Caledonia, a filariasis survey of Tahiti, a study of diabetes mellitus in Guam, an anthropological and archaeological survey of Saipan and an ethnological study of the Gilbert and Ellice Islands. Substantial progress is being made through the co-operation of the United Nations Social and Economic Council and its specialized agencies in awakening countries of the Pacific Area to the urgent need for taking measures to conserve their renewable natural resources. During the year the executive secretary of the Pacific Science Board visited the French Institute of Oceania, at Noumea, which it is hoped will increasingly become a base for international co-operative research in various fields of science.