

## SCIENCE NOTES AND NEWS

**Grant for Research in Hyderabad.**—The Nizam's Government have sanctioned a non-recurring grant of Rs. 15,00,000 and a recurring annual grant of Rs. 2,76,000 for the Central Laboratories for scientific and industrial research in Hyderabad. Orders for the equipment required have been placed in the United States of America, and are expected to arrive shortly. The Central Laboratories, besides functioning as the testing and research unit, give technical help and advice to the general public, industrialists, and various Government Departments. They will have their permanent buildings near the Osmania University, and 56 acres of land have been acquired for this purpose.

**New Comet Seen.**—The discovery of a new comet—visible with the aid of a moderate telescope—was reported to the Harvard University Observatory.

The comet is in the 12th magnitude and was sighted on July 18 and July 23 and Mr. C. A. Wirtanen at Lick Observatory, San Jose, California. Comets, generally, are not visible without the aid of a telescope beyond the sixth magnitude.

Mr. Wirtanen described the new comet as "diffused with its central nucleus" the constellation Wauarius. He believed it would be visible for some weeks.

**The Indian Mathematical Society.**—The 15th Biennial Conference of the Society will be held at Waltair, Madras Presidency, under the auspices of the Andhra University, from 22nd to 24th December 1947.

Members wishing to read papers at the Conference are requested to send their papers along with a short summary to Prof. A. Narasinga Rao, Department of Mathematical Physics, Andhra University, Waltair, so as to reach him on or before 15th October 1947.

**Prize Problem in Mathematics.** The Indian Mathematical Society has proposed the following problems for the *Narasinga Rao Medal—Mathematical Research in 1948*.

To make a contribution to the theory of plane projective geometries, particularly the following types of non-desarguesian geometries:

(1) The geometries where a single  $(p, L)$  Desargues' Theorem holds where  $L$  is a line passing through the point  $p$ . [The  $(p, L)$  Desargues' Theorem states that if the three joins of the corresponding vertices of 2 triangles concur at  $p$ , and if two pairs of their corresponding sides intersect on  $L$ , then the third pair also intersect on  $L$ ].

(2) The geometries in which there is a transitive group of translations.

(3) The geometries in which the theorem of the complete quadrangle (that is, existence of a unique harmonic conjugate  $C'$  of  $C$  with respect to  $AB$  for every triad of collinear points) holds.

(4) The required "contribution" is to bear on the following questions:—

- (i) The distribution of points  $p$  and lines  $L$  passing through  $p$ , such that the  $(p, L)$  Desargues' Theorem is true, the distribution of collinear triads of points  $A, B, C$ , such that  $C$  has a unique harmonic conjugate with respect to  $AB$ .
- (ii) The distribution of quadrangles with three collinear diagonal points.
- (iii) The projective group of the plane and the projective groups of its straight lines.

The solutions of the prize problem are to be sent to the President of the Society at the time, and the last date for the submission of the theses is the 1st July 1948.

For further particulars and references to literature on the problems of research apply to:—Dr. A. Narasinga Rao, Editor, *The Mathematics Student*, Andhra University, Waltair.

**All-India Board of Technical Studies.**—With a view to attaining uniform standards in Engineering Education, the All-India Board of Technical Studies in Engineering and Metallurgy have instituted in the first instance Diploma and Certificate courses in Electrical Engineering.

The All-India Diploma course is a full-time three-year course in an affiliated Institution followed by one year of practical training. The Diploma has been provisionally recognised by the Federal Public Service Commission for admission to examinations held by them for recruitment to certain posts under the Government of India.

The All-India Certificate course is a part-time course of three years' duration. Persons employed in workshops and industry are eligible for this course which enables them to acquire further knowledge in subjects relating to their profession.

**National Institute of Sciences.**—At a meeting of the Council of the National Institute of Sciences of India and the Fellows of the Institute held in Bombay on the first of August, Pandit Jawaharlal Nehru was elected Fellow of the Institute.

The meeting assured Pandit Nehru of their full support in the tasks of raising the lot of the people and the scientific development of India and expressed the hope that they could count on his active participation in the activities of the Institute.

**Central Medical Institute.**—India will have a unique organisation in the Central Medical Institute to be established at the cost of five crores of rupees.

Blueprints for the Institute, first suggested by the Bhore Committee, have been worked out in a report prepared by a Committee presided over by Sir A. Lakshmanaswami Mudaliar. The Institute, which is to be located in Delhi, will be primarily an advance research and training centre. The model adopted is that of

the famous Johns Hopkins Medical College in U.S.A.

The Institute will be built over a period of ten years at a capital cost of five crores of rupees, and an annual recurring expenditure of Rs. 56 lakhs will be incurred. It will have a 1,000-bed hospital attached to it. The Government of India are considering the report.

**Food Technology.**—The Rice Technology Committee has recommended the use of par-boiled rice in place of raw rice as the former gives a higher yield of the whole unbroken rice, has more nutritive value and has better keeping qualities than raw rice. In view of the world shortage of rice a greater out-turn of whole parboiled rice should be of great significance in India's rice economy. The Committee also recommended the standardization of the parboiling process in India.

The Food Processing Committee has recommended further research on the processing of seed-cakes and the pilot plant production of soya-bean milk.

**Adhesive for Plywood Industry.**—The Forest Research Institute, Dehra Dun, has taken out a patent for the manufacture of prolamin adhesive which is extracted from gluten, a by-product of starch factories. This adhesive is of unique importance to the Indian Plywood Industry, and in spite of its low cost approaches phenolformaldehyde synthetic resin in efficiency.

**Aluminium Production in C.P.**—It is officially stated that the Provincial Government has decided to establish a factory for the production of aluminium in C.P. Of the raw materials required, bauxite of suitable quality is available in plenty.

This province has enough coal resources, and electricity can be generated at an economic rate. The establishment of this industry, it is stated, will result in the setting up of rolling mills and fabrication units and in the manufacture of titanium and aluminium powder pigments.

Chemical industries as sulphuric acid, required also for super-phosphate manufacture and caustic soda, will follow as a natural corollary.

**Expedition to Tongaland.**—Tongaland in Zululand, near the Portuguese border, is a storehouse of immense value to the scientist. It is through this very inaccessibility, however,

that so little is known of the territory or its potentialities.

A representative body of scientists will carry out a geographical, zoological and botanical investigation to determine its potentialities for field studies and for scientific research and education. The expedition will also investigate the area's suitability as a nature reserve and the best way of opening it for visitors.

From a scientific point of view great importance attaches to the extensive fossil beds in the Ndumu area. This area is best known for its ammonites (fossilised molluscs with distinct tentacled heads). Of outstanding interest to scientists also is the investigation which will be made to determine, if time permits, the area in Northern Zululand where tropical flora and fauna integrate with the sub-tropical.

It is well known to scientists that many forms of tropical flora and fauna disappear in the vicinity of Hluhluwe Reserve. The best known example of this is the tsetse fly, whose depredations, so widespread in tropical Africa, in the Hluhluwe and Unfolosi area, disappear.

**Experiments with Foreign Paddy.**—An imported variety of Chinese paddy cultivated in Kashmir, is reported by the I.C.A.R. to yield twice as much as the local varieties. While this does not need artificial manure, the soil fertility is to be maintained with green and farmyard manure.

Of the other types of paddy imported into India some years ago, the Russian variety has been harvested about six weeks earlier than the indigenous kind. There are great possibilities of this rice being grown on high altitudes between 7,000 and 9,000 ft.

### GEOMAGNETIC ACTIVITY

Geomagnetic activity during the quarter April-June 1947 was very much on the decrease as compared with the previous quarter. Some details of the geomagnetic disturbances recorded at the Alibag Magnetic Observatory during the quarter April-June 1947 are given in the following table in which  $t_0$ ,  $t$  represent the time (I.S.T.) of commencement of the disturbance and its intense phase respectively, and  $T$  the duration of the intense phase expressed in hours. The ranges in the three different elements (D, H and V) of the earth's magnetic field have also been given, D, in minutes of arc, H and V in  $\gamma$  where  $1 \gamma = 10^{-5}$  gauss. The maximum  $k$ -index recorded during the disturbances have also been given.

Date	$t_0$	$t$	T	Range			km	Nature of commencement
				D	H	V		
1947—								
April 17-18	II. M. 17 54	II. M. 01 08 on 18th	IIrs. 3½	Min. 9.8	$\gamma$ 429	$\gamma$ 103	8	Sudden
May 24	07 42	12 15	3	4.9	225	51	7	Sudden
June 5	12 56	12 56	2	4.9	198	51	6	Sudden
June 13-14	23 20	08 30 on 14th	7	9.3	143	86	6	Sudden