ASTRONOMICAL NOTES

Planets during September 1939.—Mercury will be a morning star for a few days in the beginning of the month and on September 22 will be in superior conjunction with the Sun. Venus will likewise be in conjunction on September 6 and will not be visible during the month. Mars will continue to be a bright object very near the meridian in the early part of the night; it is moving eastwards in the constellation Sagittarius and gradually getting fainter, its stellar magnitude on September 15 being −1·5 (nearly equal to that of Sirius).

Jupiter, which will be in opposition to the Sun on September 28, will be at its brightest magnitude −2·5, and can be seen almost throughout the night. Saturn is moving slowly in a retrograde direction in the constellation Cetus and will be crossing the meridian about a couple of hours after midnight. The ring ellipse is widening, the angular dimensions of the major and minor axes being 44″ and 12″ respectively. Uranus will be found a little to the north-east of Saturn in the eastern border of Aries. A lunar occultation of some interest that can be observed in this country is that of α-Cancri (a fourth magnitude star) on September 11.

Comets.—Periodic comet Brooks II was detected at its return on June 17 by Jaffers and Miss Adams at the Lick Observatory (U.A.I.Circ. 779). The object was exceedingly faint—of the 17th magnitude, and the physical appearance is reported to have been diffuse without central condensation or nucleus. The comet has a period of 6·94 years and is due to pass perihelion on September 15. It is likely to become bright enough to be visible with moderate optical aid. The other comets discovered this year will be very faint and can be seen only with powerful instruments.

Variable Stars.—Two well known variable stars O ceti (Mira) and χ cygni are reaching maxima at the end of August and will probably be visible to the unaided eye in September. The position of the former is given by R.A. $2^h\ 16^m$ Declination 3° 15′ South. The stars are readily identified by reference to a map. The course of their light changes can be deduced by comparing them with surrounding stars.

T. P. B.

International Congress of Anthropological and Ethnological Sciences

A pre-war organisation, known as the Congress of Anthropology and Prehistoric Archæology, was founded in Europe as early as 1865, and its reunions were held at Geneva (1912), Monaco (1906), Paris (1900), Moscow (1892), Paris (1889), Lisbon (1880), Budapest (1876), Stockholm (1874), Brussels (1872), Bologna (1871), Copenhagen (1869), Norwich and London (1868), Paris (1867), Neuchatel (1866), and Spezzia (1865). A projected session of the Congress which was to have met at Madrid in 1916 had unfortunately to be dropped on account of the Great War. After the War the *Association pour l'enseignement des sciences anthropologiques* at Paris established in the same city, under French law, a permanent organisation with the name *Institut international d'anthropologie*, with the object of "grouping, co-ordinating, and centralising the efforts of all persons engaged in anthropological problems, provided they are accepted by its *conseil d'administration*". Till the year 1927 the *Institut* did good service to anthropology, but most foreign anthropologists were not satisfied with its organisation which was international only in name. Attempts to revive the older congress and enlarge the scope of the *Institut* were not successful, but in 1933, on the initiative of Royal Anthropological Institute of London and the survivors of the Geneva committee of 1912, a conference was held at Basel to consider measures for the establishment of a truly international organisation of which the ICAES was the result. Prof. J. L. Myres (Oxford) who represented the Royal Anthropological Institute invited the ICAES to hold its first session in London.

The first session of the Congress which met in the University College, London, was an unqualified success due particularly to the organising capacity of its British General Secretary, Prof. Myres. The Duke of Onslow was the General President, and the session was opened by H. R. H. Prince George acting on behalf of his brother, the Duke of York (now King George VI) the Patron of the Congress. The work of the session was done in eight main sections: Anatomy and Physical Anthropology, Psychology, Demography and Population Problems, Ethnography, Technology, Sociology, Religion, and Language and Writing. Recommendations were adopted in regard to teaching of Anthropology and Ethnology in Schools and Universities; the need for further research into the mental aptitudes of African peoples; the creation of a permanent census of India; and training of administrators in Anthropology, etc. Committees were set up to encourage the use of films in anthropological work, for the standardisation of anthropological technique, for international research on arctic peoples and cultures, and for the compilation of a comparative vocabulary of anthropological and ethnological terms.

The second session of the Congress was held in Copenhagen in August 1938 under the presidentship of Dr. Thomas Thomsen of the Danish National Museum and the patronage of King Christian X of Denmark and Iceland, "who honoured the inaugural meeting with his presence". It was attended by over 700 delegates from all parts of the world. There were additional sections for Asiatic Ethnography, Arctic Ethnography, European Ethnography and Folklore. In addition to the existing committees fresh ones were constituted for the conservation of aboriginal people and to deal with the problems of megalithic cultures.

India is represented on the *Comité d'honneur* by Rai Bahadur Sarat Chandra Roy of Ranchi, and on the Permanent Council by Mr. K. P. Chattopadhyay, Prof. G. S. Ghurye, Dr. B. S. Guha, Mr. J. P. Mills, Dr. A. Aiyappan and Dr. B. K. Chatterji, the last two being National Secretaries for India. The functions of these representatives are "mainly to ensure that the work of the Congress is known to all students of the subjects with which it is concerned; to bring to the notice of the Congress Bureau all projects for collaborated research in which assistance is offered or desired by their compatriots; and to take the necessary measures to ensure that the next session of the Congress (which should be in 1942) is announced to Indian anthropologists and ethnologists, and that suitable communications are made by them". The official language of the Congress is French, but communications are permitted to be in German, Italian, English and Spanish.

A. AIYAPPAN.

SCIENCE NOTES AND NEWS

Study of the Oil from the Seeds of Star-anise (Illicium; Natural order: *Magnoliaceæ*). —Messrs. J. W. Airan and S. V. Shah (Rajaram College, Kolhapur), write:

The physical and chemical constants of the fixed oil (Petrol Ether extract, yield 55 per cent. on the weight of the decorticated seeds) from the seeds of Star-anise, which is reputed to be of medicinal value (Nadkarni, *Indian Materia Medica*, 1927, pp. 463) have been determined. The oil has a reddish yellow colour and does not possess any characteristic taste. The data obtained are summarised in Table I.

TABLE I

Specific Gravity at 25° C.	0·9128
Refractive Index at 25° C.	1·4677
Acid Number	11·62
Saponification value	194 ; 195
Iodine Value	88 ; 89
Reichert-Meissl value	0·746 ; 0·758
Polenske Number	0·28
Acetyl Value	8·41 ; 8·33
Unsaponifiable matter	0·5676 %

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An Absolute Determination of the Acceleration due to Gravity.—In the *Philosophical Transactions of the Royal Society*, (A), 1939, 238, 65–123, J. S. Clark has given an account of a new determination of the acceleration due to gravity at the National Physical Laboratory, 51° 25′ 14″ N. and 0° 20′ 21″ W., and 10 metres above sea-level. A reversible pendulum of light metal (Y-alloy) of an I-section and one metre in length was swung from a knife-edge in vacuum. Blocks of non-magnetic delta metal were attached to the ends of the I-section rod, two exactly similar blocks B and C being fixed on opposite sides, and two more blocks D and E attached to C at one end. The blocks B and C carry planes which are supported on the knife-edge. The pressure in the tube E inside which the pendulum oscillated was less than 5×10^{-3} mm. Three platinum resistance thermometers were used to obtain the temperatures at three different parts of the pendulum. Electrical signals were produced by means of a platinum contact piece attached to the pendulum; the closing of the contact was made to short-circuit a portion of the grid bias battery of a valve circuit. This relay operated the marker which recorded the oscillations of the pendulum on a chronograph record on which another marker recorded the oscillations of the N.P.L. quartz crystal clock. A special support made of girders was used, and the knife edges were of hardened steel. The effect of the yield of the support was determined according to the method of Schumann (1899) by means of observations on the amplitudes of two pendulums swung from the support. There were 100 divisions to a second on the chronograph record and readings could be taken correct to 0·05 of a division. By observing 12,195 vibrations the half period was found to be 1·002891$_5$ sec. The length of the pendulum was found by means of a standard end-gauge. The effects of a change of amplitude and the buoyancy, drag and viscous resistance of the residual air were found to be negligibly small. Corrections were made to allow for the changes in the effective length of the pendulum on account of (1) variation of temperature; (2) the reduced pressure (the length was found to have increased in vacuum by 0·6μ); (3) the elasticity of the support (the length increased by 1·5μ); (4) the compression of the knife-edge (the length increased by 0·5μ); (5) the elasticity of the rod (the length diminished by 0·7μ); and (6) the curvature of the knife-edges (the effect on g varied from 0·0001 to 0·001 gal.). The following is the author's estimate of the likely errors on account of the various factors affecting the determination of the periods T_1 and T_2:

Temperature	± 0·6 mgal.
Amplitude	± 0·3 mgal.
Clock Rate	± 0·3 mgal.
Interpretation of Chronograph Record	± 1·1 mgal.
Radius of knife-edges	± 0·1 mgal.
TOTAL	± 1·3 to 1·4 mgal.

The final value obtained for g at the above location was 981·1815 gal. T. S. S.

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Variations in Cosmic Ray Intensity and Cosmic Ray Bursts.—The analysis of cosmic ray intensity measurements carried out on voyages on the Pacific Ocean (Piara S. Gill, *Phy. Rev.*, 1939, 55, 1151) reveals that the minimum of cosmic ray intensity near the equator averages 10·3% less than that at Vancouver (lat. 54°·8). The origin of the latitude effect