

the number of meteors seen during intervals of five minutes.

(4) At least once each hour count, over intervals of not less than five minutes, the number of meteors of each magnitude. A continuous record of the magnitudes of all meteors seen, from which any time-variations of the magnitude distribution may be found, would be extremely valuable.

(5) If low-power binoculars or a comet-seeker are available, determine and record the number of meteors of various magnitudes seen through such optical instruments.

(6) Utilize whatever photographic equipment is available for securing both trails and spectra of the meteors. For detailed suggestions see papers by Dr. P. M. Millman².

(7) When reporting the observations, give all the data that are obtained and descriptions of the field

of view, time system, telescopes, etc., employed. At a later date superfluous information may be disregarded, but omitted data cannot be recreated.

For convenience in identifying the radiant, its approximate position is indicated by *R* in the accompanying chart. The location and visual magnitudes of a few easily identified, faint stars are also indicated (crosses) to aid in fixing the limit of visibility and in determining the magnitudes of faint meteors.

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¹ *Pop. Astro.*, 47, 303 (1939).

² *Pop. Astro.*, 41, 293 (1933); *J. Astro. Soc. Can.*, 31, 295 (1937); "Amateur Telescope Making, Advanced", p. 544 (New York: Scientific American Press, 1937).

Points from Foregoing Letters

J. F. Allen and J. Reekie state that the force associated with heat flow in He II has been found to possess two components. When heat flows in a tube containing He II, the liquid which is close to the surface of the capillary is forced to flow in the direction opposite to that of the flow of heat. This is the so-called fountain effect. In the centre of the capillary, however, liquid is forced by the flow of heat to move in the same direction as the heat flow. There is evidence that the fountain effect, that is the surface component, becomes saturated when the heat current is sufficiently high.

According to C. Moller and L. Rosenfeld, recent developments of the vector meson theory lead to the view that the meson field is neutral. They state that the quadruple moment of the deuteron, and indeed the consistency of the whole meson theory of nuclear forces, is much clarified by introducing pseudoscalar meson fields as well as the vector fields.

G. W. Brindley and G. H. Atkinson point out that the characteristic temperature of copper obtained from X-ray measurements at low temperatures agrees with the specific heat value, in contradiction to the previously reported result of Owen and Williams obtained from X-ray measurements at high temperatures.

E. A. Owen and R. Wilson Williams find that the characteristic temperature of gold deduced from X-ray measurements agrees with the value obtained by other methods. They suggest that the results which they previously recorded for copper at high temperatures need further investigation under more rigorous conditions.

H. Benioff and B. Gutenberg describe results obtained with electromagnetic microbarographs designed by the former. They respond to the range of frequencies 5 cycles per sec. and to 2 cycles per minute, and are capable of recording the natural movements of the atmosphere. Wave movements, produced by earthquakes, surf or artificial sources, and also air currents can be detected.

The lethal effects of neutrons and γ -rays on broad bean roots are compared by L. H. Gray, J. Read

and J. C. Mottram. Using earlier results, it was found that the biological effect produced by a given amount of absorbed γ -ray energy was produced by about one tenth of this amount of absorbed neutron energy.

A. R. Martin and R. N. Hermann find that when a quantity of copper salt equivalent to the sodium oleate present is added to an emulsion of benzene in water, the solid obtained on evaporating the benzene thrown out is different from the product of the interaction of sodium oleate and copper salts in aqueous solution. They make suggestions about the nature of the double layer round the oil droplets in emulsions.

B. Mendel, D. Mundell and F. Strelitz find that calcium and magnesium ions activate and potassium ions inhibit cholinesterase. These effects are brought about by physiological concentrations of the electrolytes and become more pronounced the lower the concentration of acetylcholine.

B. d'Oliveira describes some experiments in which it is shown that the leaves of cereal seedlings experimentally inoculated with some rusts (*Puccinia*) present an increase of the total amount of nitrogen. The question is put whether rusts are able to fix nitrogen directly from the air.

W. Garstang criticizes the nomenclature of British Nudibranchiate Mollusca which was adopted in the last edition (1931) of the "Plymouth Marine Fauna" of the Marine Biological Association from Iredale and O'Donoghue's Synonymic List of 1923. He gives examples of the unreliability of this list, and advises a return to the nomenclature of Eliot's Revision of Alder and Hancock's Monograph (Ray Society, 1910).

F. Resende submits photomicrographs which he claims support the view that the chromonema is split longitudinally at metaphase.

The possibilities that meteor showers, associated with comet Giacobini-Zinner, will appear on October 9-10, 1939 and 1940 are discussed by F. Watson, and the most valuable types of observations are detailed.