Epoch November 17, 3h. 30m., tenth order of magnitude. Principal maximum, November 17, 17h. 25m.; secondary maxima, November 17, 23h. 30m., and November 18, 5h. 5m.

Epoch November 17, 15h. 30m., approximately sixth order of magnitude. Principal maximum, November 19, 12h. 55m.; secondary maxima, November 18, 15h. 15m., and November 19, 22h. 10m.

Epoch November 24, 2h. 30m., approximately fourth order of magnitude. Principal maximum, November 23, 5h. 30m.; secondary maxima, November 22, 15h. 20m. and 18h. 20m.

Epoch November 25, 4h. 40m., eighteenth order of magnitude. Principal maximum, November 24, 2h. 35m.; secondary maxima, November 24, 12h. 40m. and 23h. 10m.

It is significant that, of the eight principal epochs of the month, no fewer than six fall due during the period of November 9–20. This, therefore, is the part of the month richest in meteoric events. The two remaining epochs of November 24–25, though nominally strong, do not rank in importance with the foregoing six.

Of these six there are three that call for special mention. The first, commencing on November 9, has the highest meteoric intensity of the month; but the epoch of November 17, 3h. 30m., may prove to be the most interesting, as it bears a certain resemblance to the epoch of November 15, 1905, and in the writer's opinion is liable to be associated with auroral phenomena. The small intermediate epoch of November 13, 16h., is the only one that places maxima between 12h. and 18h. on any of the three nights November 14–16, two of its secondary maxima becoming due between these hours on the night of November 16. The general Leonid maximum will therefore probably be best observed on the night of November 16, but late members of this well-known star shower are likely to be strongly in evidence also on the following night.

JOHN R. HENRY.

2 Belgrave Villas, Rathmines, Dublin, November 6.

### Tick (Ixodoidea) Generic Names to be included in the "Official List of Zoological Names."

(1) THE international committee invited by the secretary of the International Commission on Zoological Nomenclature to make a detailed study of the nomenclature of ticks (Ixodoidea), and consisting of the following specialists in this group, W. Dönitz (Berlin), Albert Hassall (Washington), L. G. Neumann (Toulouse), G. H. F. Nuttall (Cambridge), and Cecil Warburton (London), has submitted its first report.

(2) Said committee unanimously agrees that the following eight generic names are the correct names for the genera in question, and that the correct genotypes, according to the international rules of zoological nomenclature, are the species cited:—

*Amblyomma* Koch, 1844a, 223–231, type *cajennense* Fabricius, 1787.

*Argas* Latreille, 1796a, 178, type *reflexus* Fabricius, 1794.

*Dermacentor* Koch, 1844a, 235–237, type *reticulatus* Fabricius, 1794.

*Haemaphysalis* Koch, 1844a, 237, type *concinna* Koch.

*Hyalomma* Koch, 1844a, 220–223, type *aegyptium* Linnæus.

*Ixodes* Latreille, 1796a, 179, type *ricinus* Linnæus.

*Rhipicentor* Nuttall and Warburton, 1908, 398, type *bicornis* Nuttall and Warburton.

*Rhipicephalus* Koch, 1844a, 238, 239, type *sanguineus* Latreille.

(3) Notice is hereby given that the undersigned will wait until May 1, 1912, for any zoologist to raise any objection to any part of the report of the special committee. If no valid point is raised by the date mentioned, the undersigned will transmit the list to the International Commission with the motion that these names be incorporated in the "Official List of Zoological Names" provided for by the last International Zoological Congress.

All correspondence on this subject should be directed to

C. W. STILES.
(Secretary International Commission on Zoological Nomenclature.)

Hygienic Laboratory, Washington, D.C., October 30.

### Localising Minute Leaks in Vacuum Apparatus.

IN view of the fact that in many branches of physical research there has arisen of late years the necessity for complicated apparatus to be kept at a high state of exhaustion, it may interest your readers to hear of a simple method of localising minute leaks.

In the case of leaks in "all glass" apparatus, I have for many years used with success Goldstein's spark method. This consists in disconnecting the kathode lead from the apparatus, putting in a small alternate spark-gap, and exploring over the suspected joints with the loose lead until a brilliant discharge to the inside of the apparatus indicates the position of the leak. The objections to this method are that if parts of the glass are very thin a hole may be made where none previously existed; it obviously cannot be used near a terminal, or at all with a "wax" joint.

An apparatus of mine involving seven distinct and complex sealing-wax joints recently developed a microscopic leak of about 1/100 mm. per hour. Being faced with the alternative of pulling the whole apparatus down and remaking every joint, it occurred to me that the extremely sensitive nature of the discharge in air to change its colour when in the presence of carbon compounds (it is, in fact, by the change from the grey of CO to the crimson of N that leaks are generally first seen) might be used with advantage. I therefore wiped each joint over with a small pad of cotton-wool soaked in petrol, keeping the discharge going meanwhile, and the instant the real offender was reached—a "metal-wax-glass" joint in this case—the discharge turned abruptly from red to blue. The method seems extraordinarily delicate, and should be applicable to all cases of air leak so long as the latter is not so large as to prevent the discharge passing.

F. W. ASTON.

Cavendish Laboratory, Cambridge, October 31.

### Multiple Rainbows.

ON Tuesday morning last, October 31, a succession of rainbows of extraordinary brilliance was visible here. The most brilliant appeared at 8.45 a.m., and lasted about five minutes.

The sun was shining brilliantly, and the atmosphere to the east was remarkably clear, while the rain-storms came up from the Bristol Channel, eight miles to the west. At 8.45 a.m. six rainbows were visible, *three* inside the main bow and very close to it, the colours being in the same order as those on the main bow, and two outside, the colours of the first being in reversed order, while the second was faint, and nearly white. Four of the rainbows were quite perfect, but the innermost of the three internal bows was partly broken, only three-quarters being visible. About one-third of the extreme outer bow was visible.

E. NEWBERY.

Sidcot School, Winscombe, Somerset, November 6.

### Dangerous Mixtures.

I SHOULD like to direct attention to the dangerous nature of a mixture consisting of magnesium powder and silver nitrate.

When a small quantity (2 to 3 grams) of magnesium powder is mixed with an equal bulk of powdered silver nitrate in a metal dish, and then from the end of a long glass rod a drop of water is allowed to fall on the mixture, a slight explosion occurs, accompanied by a vivid flash.

The unexpected violence of this reaction led to serious burns in my own case.

Mercuric nitrate when substituted for silver nitrate also reacts vigorously with magnesium powder under the same conditions, brown fumes, but no flash, being produced. With barium nitrate the action is slight, heating only appearing to take place.

HAROLD CALAM.

The University, Leeds, October 27.



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