

The subject of scientific classification is a very important one, and it is well to know that it is in as good hands as those of the committee of the London Conference. But while this committee works, others do not need to sleep. The science of classification, and of bibliography generally, has no representative in this country, neither a society nor a periodical. The *Library Journal*, 'chiefly devoted to Library Economy and Bibliography,' is really devoted exclusively to the former. The few short contributions to bibliography that have appeared there of late have been of small consequence, and perhaps naturally so. The librarians are confronted with many practical questions of administration that urgently need solution, and have little time to devote to mere theoretical questions. But there is certainly not only room, but need, for some center for the study of bibliography proper, and more particularly, classification. It is too late now to make any proposition for forming a section of bibliography at the Buffalo meeting of the American Association. But, in the meantime, would not the editor of *SCIENCE* consider the establishment of a department for bibliography in the columns of this JOURNAL? If the men who work in this field could have such an intellectual meeting place they might by and by find their way to meet and organize for work.

AKSEL G. S. JOSEPHSON.

THE JOHN CREER LIBRARY, CHICAGO.

METEOR OR BIRD?

TO THE EDITOR OF *SCIENCE*: In your issue of July 31 (p. 140), quoting from the daily press, it is stated that Mr. William R. Brooks, Director of Smith Observatory, while observing the moon recently, saw a dark, round object, believed to be a meteor beyond the earth's surface, pass slowly across the moon's surface in a horizontal direction. Is it not possible that this 'object' may have been a bird?

Few astronomers, in my experience, are aware of the number of nocturnal migrating birds that may be observed under proper conditions. If, during the September migration, a comparatively low-power glass is focused on the full moon, at certain elevations, it is probable that an almost continuous stream of mi-

grants will be seen passing through the narrow angle subtended by the moon's limbs. Thus at Tenafly, N. J., on the night of September 3, 1887, in the observatory of the late Mr. J. F. Panlison, Mr. John Tatlock, Jr., and myself, using a 6½-inch equatorial, saw no less than 262 birds between the hours of eight and eleven. (*Auk*, V., p. 37.)

Several years later we obtained nearly similar results from the observatory of Columbia University, New York City, where, thanks to the courtesy of Professor Rees, we were permitted to use a glass, the finder of the large telescope proving strong enough for our purpose.

Previously, observations of this kind had been made at Princeton, N. J., by Mr. W. E. D. Scott and Prof. C. A. Young, in October, 1880, and April, 1881. On the first named date four and one-half birds were recorded per minute, for a period not stated; on the latter date thirteen birds were noted in three-quarters of an hour. (*Bull. Nutt. Orn. Club*, VI., pp. 97, 188.)

The spring migration of birds begins in this latitude in February, reaches its height early in May, and is concluded by June 10th. The fall migration begins about July 1st, reaches its height in September, and is not concluded until December. It is evident, therefore, that an observer of the moon is likely to have birds cross his field of vision at almost any time of the year, though the movement can be studied with greatest profit during the September migration, when the heavens are, doubtless, more thronged with birds than at any other time.

It happens that we are now on the eve of this great flight of feathered meteors, and astronomers who have the time and inclination to focus their glass on the moon this coming 21st of September can render an important service to ornithology.

In the first place, their observations would throw much light on the question of 'highways of migration.' It is generally accepted as a fact that birds are guided in their nocturnal journeys by the topography of the land over which they are passing, and that river valleys and coast lines are the most frequented pathways. The results obtained by observers situated within the limits of the same wave of migration would have a direct bearing on this subject.

But a more important question to determine, and one about which much less is definitely known, is the height at which these night-flying birds migrate. Both Messrs. Scott and Young, and Mr. Tatlock and myself, solved this problem by a hypothetical assumption of the inferior and superior distances at which a bird would be visible. In this way we arrive at the conclusion that the birds seen were between one and three miles above the earth. There is much confirmatory evidence of the truth of this supposition. For instance, Mr. R. A. Bray records in *Nature* (Vol. 52, p. 415) a flight of birds observed by him through a telescope directed toward the sun, at 3 p. m., on September 30, 1894, at Shere, Guilford, England. The birds were invisible to the naked eye, but must have been at least two or three miles away, as both birds and sun were in focus.

Additional observations are needed, however, before this matter can be considered as satisfactorily settled. If, by experiments made during the day, the observer can ascertain with exactness the lesser and greater distances at which a bird would be visible through a glass focused on the moon, and the appearance of a bird at a known distance, he would then have established some basis for comparison of the observations made at night.

It is also of importance to note the time occupied by the bird in crossing the moon's face. This varies greatly; some birds appearing as a mere flash of wings, while others are silhouetted against the moon with great distinctness, and are in the field for several seconds.

Assuming that small birds migrate at the rate of about forty miles an hour, and that they pass through the field at right angles to the line of vision, we have here a means of determining approximately the width of the angle at their point of crossing and consequently, in connection with the moon's elevation, their height above the earth.

FRANK M. CHAPMAN.

AMERICAN MUSEUM OF NATURAL HISTORY.

CURIOUS FREAK IN AN APPLE TREE.

SOME very curious apples were found last year in an orchard about a mile north of Lake Erie. The apples on the northeast side of a

certain tree were Rhode Island Greenings, such as the tree had always borne, while those on the southwest half of the tree were of a mixed character, each apple being partly Greening and partly Talman Sweet.

The different kinds occurred in sections, for the most part corresponding to the carpels. In some, three sections or three-fifths were Greening and two-fifths Talman Sweet, while in others the proportions were reversed. In others one-fifth was Greening or Talman Sweet, and in others again the proportion of Talman Sweet was still less.

The different parts were in most cases easily distinguished by color and by the greater protuberance of the Greening as forming part of a larger apple. The flavor of the parts was as purely Greening or Talman Sweet as if they had belonged to separate apples on separate trees, except where the two came together.

The line of demarkation between the parts, though not very definite, corresponded in most cases with the divisions between carpels, and ran from base to summit, except that a small part round the summit seemed in all cases to be Greening. Sometimes a portion of Talman Sweet was found wedged in at the base of a segment, extending only about half way to the summit.

A short distance to the southwest of this tree stands a Talman Sweet tree; and there can be no reasonable doubt that the phenomenon arose from cross-fertilization between the pollen of the Talman Sweet and the ovule of the Greening. It is difficult, however, to see why the pollen, which acts directly upon the ovule, should so profoundly affect the receptacle and calyx, which make up the fleshy part of the apple. Equally difficult is it to understand why cross-fertilization, which must frequently occur in apple trees, should in one instance produce mixed fruits, and in a thousand cases produce no appreciable effect whatever. Perhaps some of the readers of *SCIENCE* can throw light upon the subject.

T. H. LENNOX.

WOODSTOCK, ONT.

I HAD the privilege of examining samples of the apples of which Mr. Lennox writes, and