banks lit up by the flashing of myriads of insects. These areas of synchronism may extend for several hundred yards at a stretch or may be confined to single trees, glowing and being extinguished with surprising regularity. Actual timing of this intermittence showed that luminescence occurs at the rate of approximately 120 times a minute.[4] During the period between the flashes the light of the fireflies reached almost complete extinction, the intensity being so low that at a few feet from a tree of actively luminescing insects it is quite invisible.

Perhaps one of the first things which is called to the attention of the observer is the fact that this synchronism is confined to localities bordering on streams, or to low, water-saturated ground. This fact was first pointed out by the late Sir John Bowering,[5] who made the significant observation that "they have their favourite trees." Around Bangkok it is commonly known that the synchronal flashing of fireflies is confined to one particular tree, the "ton lampoo" of the Siamese—*Sonneratia acida*. In all of the observations which the writer has made, no exceptions to this have been found, but whether this particular tree is the gathering-place of the insects in cases of synchronism reported from other parts of the East is a question.

The fact that *Sonneratia acida* is the tree on which the insects congregate around Bangkok leads one to question the statement that has been frequently made to the effect that the synchronal flashing of the fireflies is a mating adaptation. *S. acida* is found both in mangrove associations, and also as a solitary tree growing along the banks of streams. In these latter cases the roots of the tree are often immersed in water, the tree at times standing several feet from the bank. If the females of the species are wingless, as is the case with the majority of the North American *Lampyridae*, there would be no opportunity for them to approach the tree. Furthermore, at no time have females been found on a tree of actively synchronizing insects, or within its vicinity. Observations on this point have been repeatedly made and have been corroborated by local entomologists who have become interested in the problem.

Among the various theories which have been advanced to explain this concerted action on the part of the fireflies is the effect of slight currents of air on the position of the body, due to the occurrence of synchronism only when the insects are at rest on some tree. The belief has arisen that slight currents of wind might so change the position of the body that the luminous organ would be exposed for a short period of time, only to be covered again when the body was allowed to return to its former position. Synchronism has been noted not only on nights when there was absolutely no wind, but also on quite windy nights.

Perhaps one of the most popular theories is that of "sympathy." According to this idea there is some particular insect which acts as a pace-maker for the rest, and they follow him, regulating their flashes by his. However, due to the fact that the insects are scattered quite generally over a tree and are not within sight of any one particular animal, this appears to be quite impossible. Furthermore, any follow-the-leader action on the part of the insects would result in a wave of light passing over the tree and originating from a definite point, a fact which is not the case once the synchronism has begun.

It is possible to inhibit the synchronism of a tree of insects by exposing them to a bright light for about a minute. When the light is turned off, the synchronism returns, having its origin, apparently, in some individual or group generally located in the central part of the tree. From this group, then, the synchronism extends over the entire tree in an irregular wave until all of the insects are flashing in unison.

Synchronism usually begins shortly after darkness has set in, the fireflies emerging from the nearby thickets and flying in an indirect course to the Sonneratia trees. During this flight to the trees there is no sign of a concerted flashing, the actions of the insects being similar to those found in our local forms during flight.

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THE KEEPING QUALITY OF HENS' EGGS

THE preserving action of carbon dioxide on eggs as observed and reported by Sharp[1] seems to be the principle of the old and well-known domestic method of preserving eggs by burying them in some cereal grain, especially oats. Since cereals are known to expire carbon dioxide under practically all ordinary conditions of storage, it is obvious that eggs buried in them are surrounded by an atmosphere composed largely of carbon dioxide. Accordingly, the old household method of preserving eggs in cereal grains is equivalent in principle to the procedure discussed by Sharp.

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[1] SCIENCE, 69: 278, 1929.

[4] O. A. Reinking (SCIENCE, 53: 485, 1921) has described the flashing of fireflies from another district of Siam. He has identified the form as belonging to the genus *Calaphotia* and reports the rate to be from 105 to 109 times a minute.

[5] Sir J. Bowering. "The Kingdom and People of Siam: With a Narrative of the Mission to That Country in 1855." 2 vols., London, 1857. (vol. I, p. 233–4.)