

feet than during other parts of the molting cycle.

The more gradual molts may also affect the rheotactic reaction. A cut of 20 per cent. in the positive response has been observed when one segment was molted. Regulation from depressed to normal positiveness occurs more rapidly after a molt than at any other time.

The detailed account just given shows that the effect of the molting period lasted for about five hours after the actual ecdysis took place. If the period extended as long beforehand it would make the time during which the rheotactic response is affected by the molting process extend over a period of ten hours. Since both the rheotactic and thigmotactic responses are weakened, this must be a critical time in the life of the stream isopod.

W. C. ALLEE

A NEVADA RECORD FOR THE CANADA OTTER.

LUTRA CANADENSIS (SCHREBER)

No otter has apparently been known from Nevada, although *Lutra canadensis* is known to occur in Idaho, and the type specimen of *L. canadensis sonora* (Rhoads) was taken at Montezuma Well, Yavapai County, Arizona. The Walker-Newcomb Expedition of the University of Michigan, in the summer of 1912, found a species common on the Humboldt River in the vicinity of Elko and Carlin, in the northeastern part of the state, and from a trapper a specimen was secured for the Museum of Zoology (Cat. No. 44,419).

The specimen obtained, a large adult male, is evidently to be referred to *L. canadensis*, as at present defined. The coloration is not as pale as described for *L. c. sonora*, being dark liver-brown above and paler below, the cheeks, lips, chin and throat whitish; and the post-orbital processes are not attenuated, as in *L. c. sonora*, but short and stout, as in typical *L. canadensis*.

ALEXANDER G. RUTHVEN,
FREDERICK M. GAIGE

SOCIETIES AND ACADEMIES

THE BOTANICAL SOCIETY OF WASHINGTON

THE eighty-seventh regular meeting of the Botanical Society of Washington was held at the Hotel Cochran, February 25, 1913. This was the

regular annual opening meeting of the society. Fifty members and forty-two guests were present.

The retiring president, Mr. W. A. Orton, delivered an address entitled "Environmental Influences in the Pathology of *Solanum tuberosum*." This paper was published in the *Journal of the Washington Academy of Sciences* (Vol. 3, p. 180, April 4, 1913).

The eighty-eighth regular meeting was held in Assembly Hall, Cosmos Club, Tuesday evening, April 1, 1913.

Mr. James T. Jardine was elected to membership.

The following papers were presented:

Notes on Diseases of Trees caused by Mistletoes:

Dr. G. G. HEDGCOCK.

Mistletoes are found only on conifers in northern and northeastern United States; only on angiosperms in southeastern and southern portions; and on both in western and southwestern regions, where they are the most widely disseminated.

The rate of spread of mistletoes is without doubt very slow. Near Frazer, Colorado, on an old burn in the forest, the rate of spread of *Razoumofskyia americana* (Nutt.) Kuntze on the lodge pole pines (*Pinus contorta* Lond.) is estimated to be from 6 to 12 feet per annum, where mechanical expulsion of the seeds aided by winds are the controlling factors. Sporadic infections at much greater distances are caused possibly by birds or animals.

Light is the most important factor in determining the spread of mistletoes of species of both *Razoumofskyia* and *Phoradendron*. Trees in the open, and in more exposed conditions, whether on ridges or edges of canyons or on level areas are most subject to attacks by mistletoes of both genera on account of the abundance of light. Trees in dense forests are not subject to attack. Mistletoes are stunted by dense shade, and bear but few, if any seeds, and can not well maintain themselves under conditions where the light is deficient.

One of the immediate effects of the presence of the sinkers of these parasites in the tissues of host trees and shrubs is a tendency to hypertrophy in the immediate region of penetration. In case of species of *Phoradendron*, unless the mistletoe plant is broken off there is little or no tendency for its sinkers to spread laterally in the tissues of the host, and when broken off, the rate of spread is slow, and no witches brooms are formed. In case of species of *Razoumofskyia*, witches brooms are commonly produced. The lateral sinkers in such cases spread in the soft tissues of the host, keeping