

the omission of the unique freshwater-sponge collected by Prof. Macoun in the lake-pond situated in the centre of Sable Island, N.S., and described by Dr. A. H. MacKay, of Halifax, as *Heteromeyenia macouni* n. sp., in *Trans. N.S. Inst. Scien.*, Vol. X, 1899-1900.

Apart from the fact that it commemorates Prof. Macoun's important stay upon the island during the summer of 1899, and increases the list of animals named after him from five to six, I think that the record is also of importance as showing his interest in freshwater life as well as in that upon land and in the sea.—FRITS JOHANSEN.

ACUTENESS OF VISION IN *Pagurus arcadianus*.—The compound eye of Arthropods is extremely well adapted to perceive movement but not so well adapted for accurate perception of form. It has been shown experimentally that ants of the genus *Formica* can see large stationary objects at a distance of 10 centimeters, but cannot see small objects, that is, objects of their own size, further than 5 millimeters. Dragonflies, which, as far as known, have the most acute vision of all Arthropods, appear to be able to perceive the form of objects at 2 meters. It is not always easy, in fact it is often extremely difficult, to say what sense is involved in bringing about a certain action in an insect or a crustacean. Many reactions of these animals which are casually put down as being due to sight are found on experiment to be due to some other sense, and any exact data on this matter are of interest from the standpoint of animal psychology.

At the Atlantic Biological Station in August,

1921, we took six Hermit Crabs, *Pagurus arcadianus*, out of the shells of the Whelk, *Buccinum undatum*, which they had inhabited, and placed the crabs in one of the large shallow tanks of running sea water in the laboratory. We then placed clean, sun-dried Whelk shells at various distances from the Hermits. Up to a distance of 80 centimeters the crabs perceived the shells at once, made straight for them, "measured them up", outside and inside, with their chelae, and, if they found them suitable, promptly inserted their bodies into the shells. In this case, there is no doubt that vision was the sense involved, since the clean shells could not give off any substance which could be perceived by the chemotactic senses.—A. BROOKER KLUGH.

Cassiope tetragona IN WESTERN ALBERTA.—While collecting in the Rocky Mountains of Western Alberta in September, 1922, I was fortunate in discovering a plant whose occurrence at this point may prove interesting to many botanists. I refer to the white or moss heather (*Cassiope tetragona*). The locality was Rocky Pass just south of Mountain Park, with an altitude of about 7,000 feet. The specimen collected was in a mossy spruce woods near timber-line. It is evidently a far northern plant, for Dr. M. O. Malte, Chief Botanist of the National Herbarium, who very kindly identified this and all other botanical specimens for me, has this to say of it: "Concerning No. 673, I am glad to state that you have brought the southern limit of this northern plant a long way south. We have *Cassiope tetragona* in our herbarium from numerous places in the far north, the most southern locality, however, being from the Yukon district."—J. DEWEY SOPER.

BOOK REVIEW

THE CONSERVATION OF THE WILD LIFE OF CANADA.—(Concluded from Vol. XXXVI, No. 7, p. 140).

While game laws with longer close seasons and more restricted bag limits have done something to prevent the rapid if not appalling diminution of all kinds of game from the lordly moose to the diminutive Plover and Sandpiper, the total result in comparison with the annually increasing number of gunners and the improvement of weapons of destruction is not encouraging. Of recent years the sentiment seems to be growing among conservationists that the only hope of preserving a remnant of many species is by establishing here and there a nucleus in the shape of a park or

sanctuary where destruction shall be absolutely prohibited. Recognizing the legitimate needs of sportsmen, these oases of protection, which may also serve as forest reserves or recreation parks, may preserve species which would otherwise become absolutely extinct, and the overflow from the boundaries afford a perennial and certain supply to surrounding territory. The United States have done much along such lines, but Canada, a newer country with more unoccupied land, has as Dr. Hornaday says, "set out to get for herself a-plenty of national parks and game preserves while the getting was good. No province seemed disposed to be left behind in this conservation enterprise. As a final result, these red-spotted maps tell a great story of enlighten-



Klugh, A. B. 1922. "Acuteness of Vision in *Pagurus arcadianus*." *The Canadian field-naturalist* 36(8), 157–157. <https://doi.org/10.5962/p.338196>.

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