

Himantopus mexicanus. BLACK-NECKED STILT.—One individual September 2, 1926, two individuals together May 29, 1927, by Langdon. One individual May 10 to 17 inclusive, 1927, observed daily by Gordon. On May 17, while Gordon was photographing Avocets, the Stilt came to within forty feet of his blind.

Limosa fedoa. MARBLED GODWIT.—May 2, 1927, Gordon and Langdon together, counted seventy-three. May 6 and 15, 1927, six and forty-three respectively were observed and counted by Langdon.

Squatarola squatarola. BLACK-BELLIED PLOVER.—One individual May 6, 1927; three individuals May 7, 1927; four individuals May 10, 1927; by Langdon. Four individuals May 12, 1927, and three individuals May 18, 1927, by Gordon.

Cyanocitta cristata cristata. BLUE JAY.—One individual January 8, 1927, by Langdon and Gordon; one individual May 18, 1927, by Langdon. On January 8, the Jay was under observation for exactly thirty minutes. He was in the company of a few Long-crested Jays.—KENNETH GORDON and ROY M. LANGDON, *Ft. Collins, Colorado*.

Cases where Birds become Harmful, and Insects Useful, Factors in Economic Problems.—The reflective biologist is aware of the great complexity of the interrelationships of animals and plants, and of their almost endless ramifications. It must always be borne in mind that we usually are able to attain only a rough-and-ready sort of justice in our investigations of such problems, and that new information may demand at any time a general recasting of our views, with consequent alteration in policies.

Instances in point come up most forcibly in connection with organisms introduced into new environments, where at first, at least, there is no 'balance of nature,' so far as the newcomers are concerned. Often as we know to our regret they run riot. The Lantana introduced in Hawaii was aided in its terrific spread by birds; then insect enemies of the plant were introduced which for the most part prevent it from seeding and the pest is subsiding.¹

The prickly pear escaping in Australia rapidly became a national problem. The seeds were carried far and wide by birds and there was demand even for the extermination of the Emu as the most effective of these disseminators. Fortunately this proposal did not prevail, for even had the Emu been removed the prickly pear would have been kept going by numerous other agents of distribution. The effective step that was taken, however, was the introduction of cactus feeding insects, and one of them "entirely destroyed some thousands of acres of one species of prickly pear, *Opuntia monacantha*, but was quite unable to feed upon the allied pest pear, *Opuntia inermis*."² Other cactus insects have been imported and the whole problem seems to be in a fair way of solution.

¹ See 'The Auk,' 42, No. 1, Jan. 1925, p. 160.

² Tillyard, R. J., 'Nature,' Feb. 12, 1927, pp. 242-243.

In New Zealand an introduced blackberry threatens to occupy the whole land, and birds, particularly the European Blackbird, carry the seeds everywhere. The only remedy seems the utilization of insects that will feed upon the *Rubus* and not upon other things of value. This is possible as shown in the case of the cactus due to the highly differential feeding habits of certain insects.

Now in the case of the *Lantana*, the prickly pear, and the *Rubus* mentioned, birds are undoubtedly on the wrong side of the equation, and certain insects wholly on the right. These insects are beneficial and birds eating them would be injurious in proportion to their indulgence in the practice. We have growing up at home similar cases, as birds disseminate barberries, alternate hosts for wheat rust, and gooseberries and currants, with the same relation to white pine blister rust. Much money is being spent in campaigns to eradicate these plants and from the standpoint of the eradicators the birds concerned are enemies.

Ornithologists and bird lovers should realize these facts and be prepared to cooperate in reasonable adjustments that may be demanded in certain cases. The birds of course have not changed their ways, they are carrying on as usual for their own ends, a process which ordinarily results chiefly in benefit to man. It is not their waywardness but ours that has turned biotic relationships topsy-turvy, and in some cases put the birds in the wrong, while previously for the same activities, they have been in the right. Nevertheless man the disturber assumes the right, as conditions change, to make new judgments and take new measures. Ornithologists while conceding what may be just and necessary for the common good can resist ill-considered proposals for aggressive action against birds especially in cases in which matters clearly can not thus be improved.—W. L. McATEE, *U. S. Biological Survey, Washington, D. C.*