NOTE ON DISTRIBUTION OF HETEROPTERA.

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In a general view of the Heteroptera of the United States, one thing stands out: *all* species from northern and central Mexico should be included in our catalogues, synopses and group monographs.

All along our southern border and the Gulf of Mexico coast, and going into the Pacific and Rocky Mountain States, supposedly Mexican species are recognized here and there. Many of the species described from the United States are to be found in the northern Mexican States of Tamaulipas, Nuevo Leon, Coahuila and Chihuahua, which border on Texas; in Sonora, bordering on Arizona; and in Lower California, on California proper. Conversely, northern Mexican insects will be found in our southern border States. This is readily understood if we consider that climate and physiography are no respecters of artificial international boundary barbed-wire fences; they need no passports and are bound neither by the races on either side of the fence, nor by the political systems of tangent nations. Hence, plant systems and animal aggregations, which follow climate and soil, are equally free to pass pink or green lines on maps.

In fact, the United States are the merging place of the Boreal and of the Subtropical, or tropical, faunas and floras. Go to Arizona and Southern California and see.

This is obvious when thought about, but much overlooked in practice. As examples, consider the great Van Duzee Catalogue of the Hemiptera, and my own essay at a Synopsis of the Heteroptera, both restricted to "America North of Mexico." Moreover, much of our American monographic work has the same limitation, even though unexpressed.

An examination of any map of Mexico and the bordering southern United States shows clearly that the wooded mountains and high arid plateaus of Sonora are a part of the Rocky Mountain system, which passes north through Arizona into Utah and New Mexico. The Chihuahua part of the system passes into Texas and again north into New Mexico. Further East come the comparatively lower lands of Coahuila and Nuevo Leon, running into eastern Texas, which is also bordered to the Gulf coast by Tamaulipas. In the West, the coast of Lower California is a continuation of the line of California.

This is *not* a faunal zone essay: its purpose is merely to point out

the actual impossibility of divorcing the fauna of northern Mexico from that of the bordering southern United States. Nor is it to say that subtropical or tropical insects will *necessarily* be found in our southern tier of States. But it is to say that such Mexican insects as come within the climatic and physiographic regions of Mexico which extend into the United States should be considered, sought for and anticipated in this section of our country. It is familiar to all that many Antillean insects are found in Florida; it follows that we should, and do, anticipate finding others. Similarly, we should regard northern Mexican insects as potential if not actual residents of the United States.

This is shown in a brief consideration of one of E. P. Van Duzee's papers, his article on the Hemiptera of the California Academy of Sciences expedition to the Gulf of California (Proc. Calif. Ac. Sci., ser. 4, vol. 12, no. 11, pp. 123–200, June 1923). Only a few of the better-known families are herein referred to. Of the 19 Pentatomoidea listed, 12 are recorded from the United States (Arizona, California, etc.); one is a common tropical and subtropical form; one a nymph of a United States genus; and the remaining 5 species are newly described. Any one, or all of these last may be found at some time in the warm southern end of California, or in Arizona. Twenty-four Coreoidea are listed (included in these are the Alydidae and Corizidae). Of these, 20 are known from the southwestern United States. Nymphs of *Thasus gigas* Burm. are listed clustered on mesquite (*Prosopis* sp.). If this be *Th. acutangulus* Stål, the common Arizona form on mesquite, which appears to the writer more possible, these species would number 21. The remaining 3 species are new, and from their localities might be looked for in Arizona. The 3 Neididae recorded are all common in Arizona and California. The 20 Lygaeidae listed are either recorded or known to me from Arizona. Thirteen Reduviidae are enumerated; two are new; the rest from California and Arizona.

The other families of the Heteroptera and all the Homoptera are not considered, as these are much less closely collected, and not so well known or represented in collections.

To summarize, out of 8 families with 66 recorded species in total, 7 species are new or unrecorded from north of Mexico, and 59 of the species are known from the United States; or, stated in another form, nearly 90% of the species recorded from Lower California are also found north of Mexico.

The preceding example is cited to indicate the extreme similarity of the Heteropterous fauna of northern Mexico, Sonora specifically,

with that of our three bordering States; and as an exact case in point for demonstration. Other similar studies might be given for emphasis, such as H. G. Barber's Florida list.

Distant and Champion in Biologia Centrali Americana, however, worked on the fauna of middle and southern Mexico, although here occasional of their species drift far north. even if their records do not show it; as *Mamurius mopsus* Stål into Arizona (this is a first record of the species in the United States).

The pith of all that precedes is that we should be aware of the Mexican fauna in all studies of United States insects, whether they be distributional, monographic, or synoptic.

THE PIGEON-FLY, PSEUDOLYNCHIA CANARIENSIS (MACQUART), IN NEW ENGLAND AND NEW YORK (HIPPOBOSCIDAE, DIPTERA).

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In recent years evidence has been accumulating that the pigeon-fly, *Pseudolynchia canariensis* (Macquart), has extended its range much farther north in the eastern United States than was known thus far. It can no longer be doubted that, at least during the summer months, it occurs normally on the feral domestic pigeons which infest New York and Boston. It will no doubt be found also in most of the other large cities of the Atlantic seaboard.

The earliest definite record from New England dates from ten years ago, although it came to my attention much later. On October 27, 1932, Dr. Richard Dow found a pigeon-fly on a window pane, in a house at Cambridge. This fly could not have been introduced as an adult on a pigeon recently imported from farther south, but must have hatched in or near the place where it was captured.

From 1937 onward I have seen, from time to time, pigeon-flies taken in Boston on birds kept for experimental purposes, notably at the Department of Pathology of the Harvard Medical School and at the Boston City Hospital. In all these cases, however, the pigeons had been recently obtained from dealers or shipped in from the South, so that the flies were probably also imported as adults.

Three or four years ago a pigeon-fly was seen on a feral pigeon examined in Boston by my colleague, Dr. D. L. Augustine. During 1941 and 1942 a flock of carrier pigeons was kept in a loft of one of the University buildings in Cambridge by Dr. D. R. Griffin and

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