outbreaks of grasshoppers, when inadequately checked by control agencies, tend to spread rather rapidly over wide areas. In other words, the problem of controlling grasshoppers may change from that of a few spotted or localized outbreaks to a statewide, regional or international problem in the course of a few years, as is the case in the present grasshopper situation of the Great Plains area.

To secure definite information on the speed and direction of grasshopper dispersal upwards of 100,000 grasshoppers were sprayed with a fast-drying red lacquer and released on July 17 a few miles west of LaMoure in southeastern North Dakota. A cage of the marked grasshoppers kept under observation showed no ill effects of the treatment and appeared to behave similarly to unmarked individuals. Two days following the release, four of the marked speci-

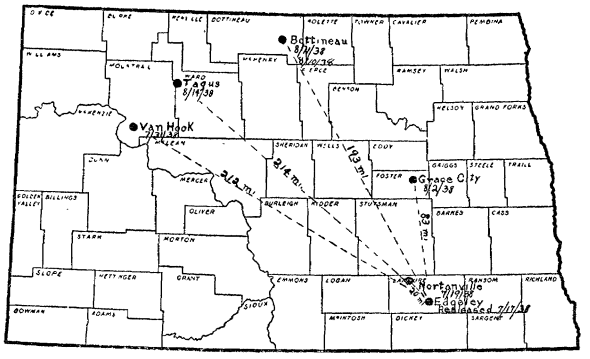

FIG. 1. Flight dispersal of grasshoppers.

mens (three *Melanoplus mexicanus* and one *Melanoplus differentialis*) were recovered near Nortonville at a point 20 miles northwest of the place where the grasshoppers were released. Subsequent recoveries included only the more migratory grasshopper, *M. mexicanus* (see Table 1).

TABLE 1

Number of specimens	Date and place of capture	Distance traveled	Number of days	Name of collector
		miles		
1	July 31—Van Hook	215	14	Mrs. John Murray
1	Aug. 2—Grace City	86	16	Orrin Topp
2	" 10—Bottineau	193	24	Mrs. W. D. Williams
1	" 11—Bottineau	193	25	V. H. Florell
1	" 14—Tagus	214	28	Jean Engen

The few recoveries verified to date have ranged from north to northwest from the point of release. A possible explanation of this may be that winds from the south and southeast, being warmer than those from the other directions, were more effective in promoting sustained flight of the insects. U. S. Weather Bureau records reveal that for 18 days of the 29-day period, beginning on July 17, winds from the south and southeast prevailed with an average daily maximum temperature of 88.9° F. For the remaining 11 days, which included 7 in July and 4 in August, the winds from the north and northwest prevailed with an average daily maximum temperature of 79° F.—a difference of 9.9° F. lower than the warmer winds from the south. The average velocity of the southern winds averaged 7.04 miles per hour, while those from the northerly directions averaged 8.1 miles. The heavy flights were generally observed to be traveling with the prevailing winds from the south.

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AUTHORITY CITATIONS AGAIN

THE discussion of authority citations by Donald Culross Peattie and Arthur Paul Jacot is very timely, for it appears that in some instances this device augments the confusion instead of diminishing it. This is particularly true if the original authorities did not publish their descriptions. In such cases the names get into circulation by exchange of material, and their ultimate publication is by a different author. Thus the specific names of Solander first appeared in Dillwyn's catalogue, and when Solander's name is quoted, as it frequently is, it gives no clue to the location of the original description in print.

Often the real meaning of a generic name is fixed, not by the original description, but by the type designation, which not infrequently is by a later author, in which case it is impossible to refer to the description and designation both without having recourse to a double citation, undesirable and awkward as such a practice may be.

My own feeling is that what is needed is a periodical that would perform the functions of a biological nomenclator, in which might be published references to descriptions, type designations, synonymies, etc., and to which reference might be made in lieu of to an "authority." For lack of such a medium students have been compelled to publish material of this sort in divers scattered places, where it is inappropriate, difficult of access and takes up space that increases the cost of publication.

It is to be hoped that biologists will succeed in devising some way by which material of purely nomenclatorial interest and significance can be concentrated in one place, where it will be available when needed.

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