grounds, where their sharp-pointed leaves are quite annoying.

It is not necessary to refer at length to the well-known dependence of the yuccas upon certain insects for the deposition of the pollen on the stigmas of the flowers, since that has been so frequently described by many observers. Such dependence seems to be general throughout the group. Even in *Samuela*, with its oddly narrowed, tubular perianth, the common yucca-moth (*Pronuba yuccasella*) is shown to be the agent in pollination.

The monograph is richly illustrated by eighty-eight plates of plants and their fruits and seeds, besides twenty-four maps showing the distribution of the species. American botany is to be congratulated on the publication of this admirable monograph.

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A List of North American Lepidoptera, and Key to the Literature of this Order of Insects. By HARRISON G. DYAR. Bulletin 52, U. S. National Museum. 1902 [February, 1903]. Pp. 723.

For many years the guide and companion of the European lepidopterist has been Staudinger's 'Catalogue of the Lepidoptera of the Palæarctic Faunal-region.' The veteran author of that work has now died, leaving us a new edition, prepared in conjunction with Dr. H. Rebel. In America we have had nothing equivalent to Staudinger's catalogue, although Dr. J. B. Smith's useful check-list of 1891 served to indicate the names and classification of the species. At last, however, Dr. Dyar has given us a detailed catalogue, including full references to literature and brief indications of localities. In preparing this work, Dr. Dyar has been assisted by Dr. C. H. Fernald, Rev. Geo. D. Hulst and Mr. August Busck, as is carefully acknowledged on the title-page; he has also utilized previous lists, so far as they proved serviceable. The literature of the subject has been searched with extraordinary care, and full advantage has been taken of the most recent advances in our knowledge of the classification of the Lepidoptera, many of them due to Dr. Dyar himself. While there are of course a few errors in copying or printing, these are extremely few, and the work as a whole is exceedingly well done. If any of us are inclined to regret that a man like Dr. Dyar, one of the most original and gifted investigators in America, should spend his time in preparing a catalogue, we may console ourselves by recollecting the character of some other catalogues, prepared by men of less ability. In truth, the thing was well worth while, and its value to students of American lepidoptera can hardly be overestimated.

The Staudinger and Rebel catalogue for the Palæarctic Region, published in 1901, includes the names of nearly 4,800 species. Dyar's list (including 44 interpolated since it was made up) includes 6,666 species, occurring in America north of the Mexican boundary and the West Indies. This is not precisely equivalent to the Nearctic region, as it excludes the tableland of Mexico, and includes certain Neotropical elements represented in southern Florida. In all probability, our region is much richer in species than the Palæarctic, as it is quite certain that our lists are very incomplete in respect to the smaller moths. In parts of the southwest, indeed, it appears that new species of microlepidoptera are so abundant that the most superficial collector can not fail to find some, while the harvest to be reaped by systematic collecting and breeding is almost unlimited.

It is difficult to determine exactly the degree of resemblance between the lepidopterous faunæ of the Palæarctic and Nearctic regions, but while the two have even a number of species in common, they are in most respects very different. Taking the index of the Palæarctic (Staudinger and Rebel) catalogue, I find 326 valid genera enumerated under the first three letters of the alphabet. Of these, only 97, or less than 30 per cent., are found in Nearctic region. The difference would seem even greater if one took the names just as they stand in the two catalogues, because different views about nomenclature have given us in many cases different names for the same genus. It is very likely that a more exact comparison between the Palæarctic and Ne-

arctic genera will lead us to unite many supposed to be distinct, but the fact will remain that the two faunæ are very dissimilar. Every lepidopterist who has collected on both sides of the Atlantic can remember conspicuous European genera wanting in America, and *vice versa*. In a work of such magnitude as the one under review there are of course some things that may be criticised adversely. A few of these may be regarded as simple errors, but most are objectionable to the reviewer only because his opinions differ from those of the author. The greatest fault, as it seems to me, is the illogical treatment of varietal names, but it must be confessed that their proper treatment is a matter of great difficulty. If it were proposed to discard all names applied to mutations or seasonal forms, and let the trinomial always stand for a geographical race or subspecies, this would at least be logical. In the list, however, we find pure synonyms, names of aberrations and some names of geographical races, lumped together as synonyms of the species, so that it looks to the uninitiated as if modern writers had proposed new specific names for the commonest and best-known butterflies! On the other hand, as valid varieties appear subspecies, seasonal forms and in some cases mere individual variations. Under *Eurymus*, the albinic females of two species appear as valid varieties, while precisely similar forms of others are placed in the synonymy or wholly ignored. The fact is, our American lepidopterists have been so busy describing the new species continually coming to hand, that they have not had time to consider a philosophical plan for recording the different kinds of variation. This work, hitherto somewhat despised, is for the future, and when it is properly done we shall see its great value from the standpoint of evolution.

The treatment of localities in the list is unsatisfactory, being in many instances incomplete, some few species being only recorded as coming from a foreign country, though we presume from their presence in the catalogue that they have been taken in the United States. A really adequate account of the distribution of the American lepidoptera could not be prepared at the present time, as its necessary basis, a good series of local lists, does not exist.

Several species are very briefly described as new in the list. The descriptions are hardly adequate, and no precise localities are given, but I understand from Dr. Dyar that a future paper will remedy these deficiencies. Several generic names are changed because of homonymy; some of the changes have been made because of prior similar but not identical names, such changes being, in my opinion, unnecessary and undesirable. It has been overlooked that *Trama* is the name of a genus of Aphididæ. The later lepidopterous *Trama* (Harvey), *Bull. Buff. Soc.*, 1875, may be called *Lepidotrama*, a name I had given it in MS. some years ago. The species are *Lepidotrama detrahens* (Walker), *L. hinna* (Geyer) and *L. griseipennis* (Grote). The butterfly genus *Tachyris*, described by Wallace, is curiously credited to Wallengren. The generic nomenclature of the butterflies follows in the main the conclusions reached by Scudder many years ago, and is consequently materially different from that in current use. The actual omissions are very few; one notices at the very beginning the absence of *Parnassius nomion minor* Elwes, and *Iphidicles ajax floridensis* (Holland). For no. 475, I would write *Copœodes waco* (Edw.), and *C. waco procris* (Edw.), the name *waco* being the older. The printing of the work is admirable, but the binding is very poor.

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East Las Vegas, New Mexico,
February 28, 1903.

Disinfection and Disinfectants. By Dr. M. J. Rosenau.

This book containing 350 pages is divided into three sections. The first part deals with the best of the disinfectants and insecticides in common use. The second deals with the places and objects to be disinfected. In the third part the important communicable diseases are considered separately, and the characteristics of the bacteria peculiar to them and the special means required to destroy them described. Malaria and yellow fever are given special mention.