with insects. These are small issues, as those above, the treatment on the whole being excellent.

1. I notice again the lack of acknowledgment of achievements of historical workers. Superb examples date back as far as Hooke's louse and Lyonnet's goat moth larva of the early 18th century. In my opinion the finest entomological illustrator was Hermann Weber. His rendering of homopteran mouthparts are masterpieces of analytical anatomical graphics. Others important in establishing the field were E. O. Detmold, A. J. E. Terzi, and G. Ferris. Some useful and important technical publications might have been cited [Edy, R. 1968, Some illustrations of microsculpture in the Hymenoptera, Proc. Entomol. Soc. London, ser. A 43:66f.; King, R. & H. Akai (eds.) 1982, 1984, Insect ultrastructure. Vols. 1-2; Catts, E. & J. Young 1959, A chalkboard technique for making illustrations, Pan-Pac. Ent. 35:163f.]. A nice little book that teaches much on the art of posturing for live insect illustrations is N. Weaver's How to draw insects (Studio Pub., London. 1958).

2. Some additional techniques are: individual sand grains are suggested for propping specimens; a bed of fine silica sand gives an even more versatile matrix for holding specimens in any position. Specimens may also be embedded temporarily in clear gelatin to hold them for drawing. Insect membrane is commonly indicated by light stippling while sclerites are left clear in anatomical works. Precautions for putting away microscope slides are given on p. 261; I would add that the box or tray should be stored so that the slides are flat, with specimen on top, to prevent gravity from tugging at the medium.

3. There are a few mistakes: p. 290, first paragraph of left column: "... a dorsal segment is a tergum or tergite"; ..., should read, "a dorsal *sclerite* is a tergum or tergite;" p. 289, top of middle column: Myriapoda is a category that *contains* millipedes (Diplopoda) and is not synonymous with them; p. 297, center column: carbolic acid or phenol crystals, not naphthalene, are usually added to relaxers to inhibit mold growth. Instructions for calibrating microscope micrometers in the "Eyepiece Scale Value Method" (p. 31), transpose "stage micrometer" for "ocular micrometer (reticle)".

4. Terms that need more explanation are "sclerotized" (used to infer hardness and/or pigmentation); "spines" (as distinct anatomically from setae); "minutens" (unfamiliar to the non-entomologist).

5. Some indefensible or inane statements appear: p. 293, center column: "Tarsal structure is second in importance only to antennal form in many insects . . . for identification to family." And on p. 301, last paragraph: "Because these animals vary so widely in size, appearance, anatomy, and requirements for preservation, the techniques for handling and drawing them also vary."

6. There seems to be a confusion of what is meant by "mounting" and "propping" (p. 260). In entomology a "mounted" specimen is one that has been prepared in some way (on pin, wings spread, etc.). These may need propping as much as an unmounted specimen.

In summary, this fine work is encyclopaedic and copies will no doubt be put on the reference shelf by many librarians. But more than that, it is also a voluptuous handbook, so full of practical data and sound conceptual advice, and beauty as well, that most copies sold will surely never be found far from the illustrator's hand.

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BUTTERFLIES OF NEPAL (CENTRAL HIMALAYA), by Colin Smith. 1989. 352 pp., 355 color figures, 3 maps. Tec Press Service L.P., 487/42 Soi Wattanasilp, Pratunam, Bangkok, Thailand. 15 × 23 cm, hardcover. \$50.00 U.S., plus \$5.00 airmail postage.

The Central Himalaya Mountains have always held a fascination for lepidopterists interested in both temperate and tropical butterflies. At last, we have a field guide to the butterfly fauna of Nepal—and one to match the demands of its incredible diversity.

The great number of butterfly species known to occur in Nepal and the rugged mountains culminating in Mt. Everest, along with adjacent rich tropical lowlands, have brought many biologists to this landlocked country to explore and enjoy its natural history and scenic beauty. The country is partitioned lengthwise into Palearctic and Oriental sets of floral and faunal provinces. It ranges in elevation from some 500 feet above sea level on the Ganges plain to the highest peaks in the world in the Central Himalaya (to over 29,000 feet on Mt. Everest in northeastern Nepal). It is little wonder that altitude seems to be the critical factor for butterfly distribution here. In fact, a significant dividing line (shown in Smith's map on p. 31) appears at about 3000 meters elevation (between 9000 and 10,000 feet); some 90% of the species above this line show Palearctic affinities, while below it, about 90% of the species are of Oriental origin. Although many references to this diverse fauna have been made in books on high-altitude entomology and in scattered publications on the characteristics of different groups of butterflies from Nepal, Smith's book is the first to cover this extremely interesting fauna in a comprehensive format.

In this new publication Colin Smith has set forth an outstanding introduction to the 614 species known to occur in Nepal. The illustrations cover more than 70% of the species (90% of the 266 genera), using more than 200 photographs of butterflies in their natural living state and another 100 photographs of mounted specimens to show uppersides and undersides. In addition to the extensive taxonomic section, Smith includes a general discussion of the biology of butterflies, including particular examples of migration, mimicry, etc. from Nepal. He also presents a fascinating introduction to the country of Nepal and to the natural geographic divisions of the Central Himalaya region, including climate, seasonality, ecology, habitats, and other attributes. The book thus provides an indispensable introductory guide to the natural history of Nepal, as well as the sole popular introduction to the tory.

For the lepidopterist, the innovative features of this book include a classification chart at the beginning of each family that shows nicely in columnar format a series of facts (subfamilies, tribes, genera, new genera, subgenera, region of origin, total number of species worldwide, and number of species in Nepal) about the classification and status of that family. Additional tables are offered to help in the identification of certain complex groups, such as the Lycaenidae. A general summary for the identification of the Nymphalidae is presented in a running tabular form. Each genus is numbered within a family, and author's name, date, type species, and general diversity worldwide are given. For each individually numbered species account, Smith gives the complete species and subspecies name, author, date of publication, common name if available, range of wingspan, comments on distribution (usually to district within Nepal), seasonality, elevational range, distribution outside Nepal, and the species' relative abundance.

Following the taxonomic section, the author traces the history of butterfly collecting in Nepal and includes a summary of species and subspecies endemic to the country, a record of principal collectors who have taken Nepalese butterflies and the species and subspecies they have taken, and a list of the butterflies recorded from Nepal (based on all authenticated Nepal records known to the author) with their habitats, altitude, seasonality, and common name. The book concludes with a selective bibliography of 48 publications on the butterflies of Nepal, indices to scientific and common names, and a brief biography of the author.

Overall, this book represents a remarkable individual accomplishment in its presentation of the first general faunal coverage of the butterflies of Nepal and the Central Himalaya. Exploration of the Palearctic high country of the Central Himalayan and Trans-Himalayan regions has lagged far behind that of the Oriental region in Nepal. Some Himalayan areas such as border districts and national parks are often closed to collecting, and limited access by road or air-strip often necessitates carefully-planned, multi-man expeditions by backpack or porters. The incredibly diverse fauna and terrain will undoubtedly produce many more species with further lepidopterological exploration of the country, as the author is the first to admit (he added two Nepalese species new to science in 1986 alone). Overall, the book is well designed and printed. Although some of the color photographs are not reproduced as clearly or as crisply as would be desirable, the overall impression of the book is quite favorable and the illustrations can be used to identify specimens. Perhaps most importantly, the beautiful photographs of habitats throughout Nepal, coupled with the author's enthusiasm for photographing living butterflies and studying their natural history, will help to engender greater worldwide interest in the wilderness conservation programs and butterflies of this fascinating country of the Central Himalaya. This book belongs on the library shelf of any lepidopterist interested in temperate and tropical Old World faunas, or in beautiful butterfly books in general. The book also will be of interest to biogeographers, ecologists, and conservationists worldwide.

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