the essays are rigid, and perhaps a trifle fierce, toward the deluded believers in the occult; these will hardly feel that they are being gently shown the error of their way. And yet Professor Jastrow's opposition is of an entirely different order from the mere pooh-poohing and scientific cold shoulders to which the borderlanders have been so often treated and of which they bitterly complain. Their views are here dealt with by one who has taken the trouble to study the matters in question, who is equipped with technical training in psychology, and who pronounces judgment with discrimination, admitting many of the facts adduced, but pointing out to what different consequences they lead from what the occultists suppose.

In attributing occultism to the impulse to interpret experience personally—to see a direct significance in whatever occurs—the author is doubtless correct in the main. It would perhaps have been still more correct, however, to say that the trouble lies in seeking a *short-cut* personal interpretation, in seeking an exclusive and private significance in phenomena, and not in a personal interpretation *per se*. For many a scientist tenaciously holds to natural law and at the same time, without throwing logic overboard, interprets the system of nature personally. But he does it in a large way and by harmonizing mechanism with personal will, rather than by seeing them antagonistic. Professor Jastrow, while not explicitly saying so, too often seems to imply that natural causation and personal significance are incompatible, and that the occultist has seized the wrong term of the pair. The occultist is really in the bonds of the same error that pervades much of our science —namely, that the mechanical view of nature excludes any spiritual significance from it; and while some scientists hold to one side and give up the other, the occultist does the same, with merely an exchange of terms. One-sided science thus is one of the inducements to a one-sided occultism, and the cure is to be found in a larger view that will do justice both to our scientific conviction that things are orderly and systematic, as well as to the equally deep and respectable conviction that this order and system is pervaded with personal purpose and personal significance.

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*Altersklassen und Männerbunde, Eine Darstellung der Grundformen der Gesellschaft.* Von Heinrich Schurtz. Mit einer Verbreitungskart. Berlin. 1902. 8vo. Pp. 458.

This massive volume is devoted to the thesis that the true beginning of those artificialities of human life that we call society is not to be sought in the family, the sexual union, the Mutterrecht, which is an exaltation of naturism; but in purely voluntary aggregations of males, called men's associations, and the classification of these by age, forming the society of the ancients. The author confesses that his attention was first called to the subject by the wide distribution and different forms of bachelors' quarters among the less cultured peoples of the earth. So many necessary acts of life require cooperation that artificial social structures of more and more complicated character grow out of the very nature of the case. War, so far from being an exception to the rule, proves it, since its struggles occasion more perfect and solid unions. It is well known and has often been commented on that, in America, while children were generally named for the mother, there was going on in many tribes a transition to father-right. A curious modern phase of this assertion of man's rights is a rôle played by the profession of interpreters, who are men of almost unlimited sway in the tribes having business in Washington City.

Doctor Schurtz in his introductory chapter prepares the way for the detailed study by explaining the natural and artificial analysis of society—that dependent on sex life and that based on purely interested and cultural grounds. The classification by age, whether allied or not with the question of blood kinship, is the earliest form of artificial grouping. This with its curb on the life of promiscuity is worked out in the second chapter. The author goes into the fullest detail with the description of the men's houses in all parts of the world.

Clubs and secret societies occupy the fourth chapter and nearly one third of the volume.

The conclusions to be drawn from the contents of the volume devoted to the existence and the future of culture society are scarcely touched, though they are so full of meaning. The author hints that altruistic ethical philosophy, on the strength of the facts here assembled, demands now a radical revision, since manifestly out of the sex and family impulses on the one hand, and the pure and simple impulses of social organizations on the other, two quite different and frequently downright antagonistic kinds of moral codes must arise. The struggle between these has been frequently remarked and treated in a poetic fashion, but the knowledge of their true significance will be made possible for the first time by the facts here set forth, and not only in the realms of custom, but in all the areas of human activity, the two sets of impulses are playing against each other and building up forms of society, in order subsequently to pull them down and destroy them.

There ought to be a good English translation of this work, which, ignoring the necessity of promiscuity at any time in human society, finds explanation of artificial social structures and functions in the inventive faculty, which has been able to create innumerable associations for men in their varied emergencies.

O. T. MASON.

## SOCIETIES AND ACADEMIES.

### NEW YORK ACADEMY OF SCIENCES. SECTION OF BIOLOGY.

A REGULAR meeting of the Section of Biology was held on April 14, Professor Bashford Dean presiding. The following program was offered:

J. H. McGregor, 'The Ancestry of the Ichthyosauria.'

A. G. Mayer, 'Color Patterns in Lepidoptera.'

C. C. Trowbridge, 'The Function of Interlocked Emarginate Primaries in Soaring Flight.'

Dr. McGregor accepted Baur's view that the Ichthyosauria are derived from Permian Rhynchocephalia, but stated that in a study of the Belodontia he had found new evidence as to the nature of the intermediate forms. The latter group is of undoubted Rhynchocephalian origin, and may almost be considered as a subdivision including forms modified for aquatic life. A comparison of Belodonts and Ichthyosaurs shows that both have evolved in the same direction, though modification has proceeded further in the Ichthyosaurs, which were marine in habit. Almost all of the skeletal features of the two orders are reducible to a common type, and, although not directly ancestral, the Belodonts must be considered as standing very near the line of descent of the Ichthyosaurs; the two orders probably had as a common ancestor some aquatic Rhynchocephalian of the upper Permian or lower Trias. The Ichthyosauria are thus brought into relation with the Archosaurian branch of the Reptilia.

Dr. Mayer presented the results of his study of the color patterns of 1,173 species of Lepidoptera: 453 *Papilio*, 30 Ornithoptera, 643 Hesperidæ, and 47 *Castina*. Counting sexual differences, 1,340 individual insects were examined; 542 *Papilio*, 59 Ornithoptera, 688 Hesperidæ, and 51 *Castina*. The number of rows of spots, bands, or combination markings upon the wings were counted, and as well the number of spots in each individual row, and the number of interspaces over which each band extended; the results show that each row of spots or bands exhibits a decided tendency to be of uniform color throughout, that rows very rarely break at or near the middle of their extent, and that the end spots of a row are more variable than those spots near the center. 'Frequency polygons' were obtained from the above-mentioned data, for the rows of markings, for the number of spots in each row, and for the extent of bands measured in interspaces. Eight such frequency polygons were determined for the spots and bands on the upper and lower surfaces of the wings in the group of Papilio + Ornithoptera, Of the four representing the conditions in the fore-wing, three exhibit two well-marked maxima, the numbers being arranged in descending series on either side of each. These maxima are three and nine spots, or bands extending over three or nine interspaces. If,