

botanical expeditions to Bolivia, one of the most important being that of Weddell, which led to the publication of his classical "Chloris Andina." Dr. Herzog has made two expeditions himself, and the book before us is largely based on his own extensive travels and observations.

The second part is divided into chapters dealing with the several groups and families of plants which comprise the flora. The characteristics of the formations are described and a brief account of the different ecological regions found on the west and east sides of the Cordillera and in the high Andes is also given.

In the third and largest part, the types of vegetation and the history of the flora are more fully dealt with, and throughout the book there are numerous good text figures showing the different types of vegetation from the low lands of the Gran Chaco, the eastern edge of the Cordillera, the Savanna region of Santa Cruz de la Sierra, and the vast high Andean region which has so remarkable a flora. There is also a useful short chapter on the cultivated plants of Bolivia, and three vegetation maps and plans conclude the volume. Throughout the book the author indicates the affinities of the flora to the floras of adjacent and distant countries.

- (1) *A Text-Book of Dental Anatomy and Physiology*. By John Humphreys and A. W. Wellings. Pp. viii + 323. (London: E. Arnold and Co., 1923.) 16s. net.  
 (2) *A Manual of Human Anatomy for Dental Students*. By R. Bramble Green. Pp. xi + 263. (London: Benn Bros., Ltd., 1923.) 18s. net.

WITHIN its necessary limitations, each of these books is admirable. Half of (1) is devoted to comparative dental anatomy, being a well-written and straightforward account of an intricate subject which may be expected to contribute considerably to the education as well as the instruction of dental students. If it fails at all it is when too great a desire for the brief and definite leads to such statements as that "the adoption of the erect attitude led to the perfecting of the hand, that marvellous piece of mechanism by which man's progress became assured, and in consequence of this came the increase in cranial capacity and intellectual development." Such a statement, moreover, does not represent current views. The less general matter is excellent.

(2) Mr. Green has filled a gap in the series of text-books. His account of the salient features of human anatomy is well arranged and well illustrated, and he has shown great discretion in necessary omissions. The ligaments called "alar or check" in the text are marked "accessory" in the corresponding figure; but mistakes are few.

*Die Pfeilgifte: nach eigenen toxikologischen und ethnologischen Untersuchungen*. Von L. Lewin. Pp. xi + 517. (Leipzig: J. A. Barth, 1923.) Grundzahl: 13 marks.

DR. LEWIN'S monograph on arrow poisons is one which neither students of toxicology nor those who are interested in primitive science and methods of warfare and the chase can afford to neglect. Its comprehensiveness and careful attention to minute detail are such that it is not surprising to learn that it is the product of some thirty years' study and research. In an introductory chapter he surveys briefly the early use of poisoned

weapons, which were well known to the ancients and may, the author thinks, go back so far as late palæolithic times, if, that is, his explanation of certain grooves in Magdalenian bone implements is correct. He then goes on to describe in detail the various forms of poison, both animal and vegetable, in use in all parts of the world, including Europe in early historic times. Not only does he deal with their preparation, but he also considers their chemical composition and gives the result of experimental observations of their effects and the length of time in which these effects are produced. Special attention has been given to the well-known Upas or Ipoh poison of the Indonesian area and the curare of South America, and in both cases interesting accounts of these poisons are quoted from early travellers.

*A Naturalist in Hindustan*. By R. W. G. Hingston. Pp. 292 + 10 plates. (London: H. F. and G. Witherby, 1923.) 16s. net.

IMBUED with the spirit of Fabre, and possessing much of his ingenuity and accuracy, Major Hingston gives a fascinating account of some of the ants, spiders, and dung-burying beetles that he has watched and subjected to various experiments in a small patch of jungle in the Fyzabad district. Of the many good things that he sets before us perhaps the most interesting are his observations on the power of communication with one another that is possessed by ants, and on their sense of direction. That an individual Phidole ant having found treasure afiel is able on returning to the nest to send forth direct to the treasure and unescorted an army of its fellows, compels our wonder. The author, however, shows convincingly by reference to other species how in all probability this amazing faculty has been evolved from very simple and perfectly intelligible beginnings:—guidance of one follower by actual touch along the whole route is the starting point; progress towards the complex phenomenon exhibited by Phidole depended on successive refinements of the olfactory sense. That sense of direction is possessed seems proven by the experiments cited; but "it is quite inexplicable to us."

*La Chimie et l'industrie*. Numéro spécial, mai 1923. (Congrès Exposition des combustibles liquides.) Pp. 852 + xcii. (Paris: 49 rue des Mathurins, 1923.) n.p.

LA Société de Chimie Industrielle organised in the month of October 1922 an International Congress on Liquid Fuels, which appears to have fulfilled the objects of the Society. A very large number of scientific and practical problems, due for solution, were discussed by the members of the Congress. The results of their labours are seen in the 800 pages of this volume, which in effect becomes a text-book illustrative of current procedure in the winning and in the utilisation of liquid fuels. Much is said of the prospect of future supplies, but little can be known with certainty in view of the doubtful duration of the yield of known wells and the unknown possibility of the discovery of further oil fields. So small an area of the world has yet been surveyed, and so little is known of the origin of the various oils, that the time is not yet ripe for the formation of broad policies. A watchful, waiting attitude is the only scientific one.