region—a vast tangle of mountains between the Himalaya and the Chinese Alps. The author has, in these and previous expeditions, made valuable contributions, both biological and geographical. Many of the plants referred to in the text bear unfamiliar names, but that is simply because the plants were unknown previously and have but recently been described. Even for the non-botanical reader the book well repays perusal. It is written in an easy style and well illustrated.

(3) Mr. Coventry's book on the wild flowers of Kashmir is the third of the series, and is on the same lines as the previous two. Fifty additional Kashmir plants are annotated and figured. Every visitor to the delectable land of Kashmir who is interested in its flora, should take these three handy volumes as his companions. The only alternatives are the bulky seven tomes of the "Flora of British India" and certain published lists of the plants of the north-west Himalaya. These lack illustrations and otherwise do not appeal to the traveller who is not a professed botanist. The figures in the series under review are coloured and are reproduced from the direct colour photographs of the author. They are of very high merit, not only in the reproduction, but also in the choice of the material. The botanist may miss the dissections which are the normal accompaniment of botanical illustrations; but the author has caught the *facies* of each plant so well that they need not be regretted. With the adequate and clearly expressed text, the results are very satisfactory, and lovers of Kashmir will welcome additions to the series.

Our Bookshelf.

The Animal Mind. By C. Lloyd Morgan. Pp. xii + 275. (London: Edward Arnold and Co., 1930.) 12*s.* 6*d.* net.

IN the preface to "The Animal Mind", Prof. Lloyd Morgan quotes the words of Don Quixote to the Duchess: "God only knows whether there be any Dulcinea or not in the world. . . ." Let us be quixotic enough, adds the author, "and some behaviourists say that it is sheer quixotry—to believe that our Dulcinea does exist. . . ." This sentence sums up the difficulties of a biologist who is asked to review "The Animal Mind", if he does not agree with the *Weltanschauung* of the author. Either you agree with Prof. Lloyd Morgan's views about scientific method and regard the views he expresses about animals as a contribution to scientific knowledge; or you do not agree with Prof. Lloyd Morgan's views about scientific method and are therefore compelled to say courteously but unequivocally that science is not advanced by speculations about what goes on in the mind as opposed to the central nervous system of an animal, and that the attempt to "put yourself in his place" is the very antithesis of the procedure which the scientific worker adopts in studying the characteristics of living matter.

The method of extensive introspection or, as the author himself calls it, "putting yourself in its place", is set forth in the following passage, which refers to the author's observations on his dog Tony: "Let me try to illustrate what I mean from what I may call the ball-situation and the stream-situation, putting myself in Tony's place. I, Tony, have learned to swim across a still pond and fetch things out of it. Meanwhile I have been learning quite a lot in ball situations. Among other things I have learned this: that if I follow a swift running ball up to a wall, and from the wall as it rebounds at an angle . . ." Those to whom this method of investigation appeals may refer to the text for the remainder of a soliloquy in which Prof. Lloyd Morgan, alias Tony, tortures his motives like the heroine of a Russian novel.

To those who place confidence in the method of Sherrington and Pavlov, the relevant issue is not whether Dulcinea exists, but whether Dulcinea belongs to fiction or to science. They will not wish to rob Prof. Lloyd Morgan of what comfort his Dulcinea can give him. They will merely insist that her place is the library. In the laboratory her charms will distract them from the serious business of the scientific worker.

Untersuchungen an Luftwurzeln. Von K. Goebel und W. Sandt. (Botanische Abhandlungen, herausgegeben von Prof. K. Goebel, Heft 17.) Pp. 124 + 6 Tafeln. (Jena: Gustav Fischer, 1930.) 12 gold marks.

THE senior author of the monograph, Prof. Karl von Goebel, during his journeys in the tropics made numerous observations upon the aerial roots of epiphytes, interesting and characteristic features of tropical vegetation; but he was not able to give them the systematic attention he desired. Dr. W. Sandt has therefore continued to study them, under Prof. von Goebel's direction, using the very fine collection of epiphytes growing in the glass-houses in the Munich Botanic Gardens, where anatomical and physiological studies were also possible. The main point under examination was the growth habit of these roots before and after entering the soil. Dr. Sandt confirms the earlier observations of Sachs and others, that in these aerial roots the growing region may be extraordinarily long and that this adequately accounts for the remarkable daily increment of growth of some of these aerial roots.

These roots, which grow obliquely, not vertically, downwards, are usually quite unbranched unless the apex is damaged. Branch root primordia may be formed, but do not grow out so long as this vigorous growth of the main root continues. When the root enters the soil, however, the zone of growth very rapidly becomes of the normal, comparatively narrow dimensions, and then the branch roots may