

range of the Nilotic negro peoples of East Africa. But, so far as I know, not a single Masai, Gala, or Nilotic negro word-root has yet been discovered in the Zulu speech. The main relationships of this very isolated language are with the East African Bantu, though there are strands of West African Bantu in its composition. It has, of course, affinities with the Herero group, and this again is related almost equally to the West African, the East African Bantu, and to the archaic forms of Bantu speech still existing in and about the Victoria and Albert Nyanzas.

Mr. Theal's book has some excellent examples of southern Bantu folklore, though a few of these stories have been so often repeated by other writers (borrowing from him) that they are a little stale. So also are the illustrations, which may be said to have become common property, being derived from early photographs and drawings going back to the 'seventies and even 'fifties. But a very important (and it seems to the reviewer more or less novel) part of the book is that which deals in pp. 264-73, and in chapter xxiv., with the growth in mental development of the South African Bantu and their increase in numbers under a civilised régime. On the whole, Mr. Theal's observations would seem to point to a very decided and more or less permanent improvement in mental development and well-being; while as to their increase in numbers under the *Pax Britannica*, there can be no question whatever.

His observations on monogamy versus polygamy would seem—whether he intends it or not—to bear out in a moderate way the opinions of various missionaries and students of Africa, that under monogamy the rate of increase is at least as great as that which prevails under the conditions of polygamy, and perhaps is greater; while the improvement in morals and the well-being and bringing up of children under the system of "one husband, one wife," can no longer be disputed.

H. H. JOHNSTON.

PHOTOGRAPHIC BIOGRAPHY OF BIRDS.¹

THE present volume is a companion to the "Home Life of a Golden Eagle," noticed in NATURE of May 26, 1910. It is about the same size, but four biographies instead of one are contained in it. The "Home Life of a Golden Eagle" as a *vie intime* will be difficult to excel. It admitted us, by means of that impersonal spy, the camera, to the closest intimacy with the entire domestic arrangements, and to the unbroken succession of parental duties of the royal birds. Mr. Beetham has attempted to do for the spoonbill, the white stork, and the common and the purple herons, what Mr. Macpherson did for the eagle. We have to confess with regret that he has succeeded only *multum post intervallum*. Both watchers employed from an ambush the same methods of the masked camera; but we have from Mr. Beetham fuller details of the methods than of the object for which they were the end. Both were experts in picture-taking, and our author's results are in no way inferior to those of Mr. Macpherson. The methods they employed are, it seems to us, those by which the accurate life-histories of our birds up to the standard of that of the golden eagle can be obtained. It will take a long time before they can all be biographed, but it will eventually be accomplished so long as among the photo-ornithologists are to be numbered men like Mr. Beetham, who despise the unnumbered difficulties, discomforts, and often very real dangers necessary to securing unimpeachable records.

¹ "The Home-life of the Spoonbill, the Stork, and Some Herons." Photographed and Described by B. Beetham. Pp. viii+47+32 mounted plates. (London: Witherby and Co., 1910.) Price 5s. net.

To be of real value, however, the observations must be a continuous series of the same subject taken at carefully chosen intervals, accompanied by detailed descriptions of careful personal observations. In this respect the present budget of biographies leaves much to be desired. Instead of a connected diary we have disconnected glimpses into the different households through swings of the door. The "Home Life of a Spoonbill" can hardly be called more than a passing "look in" at the nursery. Yet the peeps we do get are not without value, and many are very interesting, but they are solitary episodes in the bird's history. Plates i. and ii. refer to one home; there its story ends. The remaining nine are pictures of another home. Plate iii. was photographed on June 17, iv. and v. on June 19, and the remaining six on June 23. We are introduced to the young spoonbills when they are ten days old; we next re-visit their home



FIG. 1.—The claw of each toe has a strong hooking action. From "The Home-life of the Spoonbill," by Bentley Beetham.

when their age is twelve and fifteen days respectively, when this second biography—which had no beginning—also ends.

This is a very great contrast to the absorbingly interesting development of the golden eagle's nestling in unbroken sequence, from its birth to its coming of age. Not more satisfying is the record of the white stork, which begins when the storklings are fully fledged, and though we have eight very excellent photographs of them, we learn nothing about their plumage changes and little about their upbringing and education by their parents. We are equally disappointed with what can hardly be called the "home-life" of the common and the purple herons. We are brought on the scene when the first chick of the former emerges on April 11; then the door is closed for six weeks—the most interesting period of the

babe's life—to re-open on the final scene, when the nestlings are ready to escape, and really do so on the approach of the observer.

The story of the purple heron contains many interesting observations on the habits of the half-fledglings, which we believe to be, if not new, at least not widely known. It seems that during the intervals between their meals they descend from the nest and disport themselves on the ground, to re-occupy it when the mother is heard approaching. Usually when a



FIG. 2.—A Bittern-like attitude, with the bill held vertically. From "The Home-life of the Spoonbill," by Bentley Beetham.

nestling leaves its nest it is difficult if not impossible to induce it to remain in it, even if replaced. Although the promise of its title-page is hardly fulfilled, the book is interestingly written, and will be read through when once taken up. As a photographer, Mr. Beetham has been most successful, and his pictures (two of which, by the courtesy of the publishers, we reproduce here) have a high value independently of their use as illustrations to his present book, which seems to be produced at an astonishingly low price.

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THE CONSERVATION OF NATURAL RESOURCES.¹

THE two men who have played the largest part in the conservation movement that has now assumed such great importance in the United States are probably Gifford Pinchot and President Roosevelt. Pinchot was primarily responsible for the forests, but he saw that the conservation of forests could not be dealt with satisfactorily by itself, but was intimately bound up with the conservation of water, of the soil, and of mineral resources. It was this flash of genius that founded a new branch of economics, and the strong personality of the President brought the subject at once into the region of practical politics.

In the volume by Mr. Van Hise, which contains the substance of lectures given at the University of Wisconsin, he traces the history of the famous conference held in the East Room of the White House on May 13, 1908. For the first time in the history of the country the governors of the various States were called together to consider a national question. The President's letter of invitation, and the declaration passed, are both recorded in the second book on our list, and are both weighty documents, worthy of a great occasion. The first outcome has been to take an inventory of the natural resources. The second, and much more difficult, has been to start a great educational campaign to bring home to the individual citizen his responsibility in the matter, and to point the way of reform.

The report of the Conservation Commission of Maryland deals with the mineral resources, soils, forests, waters, fisheries and oysters, game, scenery, public health, and roads, thus giving a more complete picture of the State than has hitherto been available in any one volume. The account of the mineral resources resembles in a general way our own geological survey memoirs, and the treatment of the other subjects is not dissimilar. Mr. Van Hise's book may be regarded as representative of the educational outcome of the movement. He discusses the minerals, forests, soils, and waters, and finally proceeds with a series of recommendations calculated to carry out the objects of the conservation movement.

Dealing first with the mineral resources, it is pointed out that

they are far greater than those of any other nation, and they bring in some \$2,000,000,000 per annum, an amount only exceeded by the returns from agriculture. Coal is by much the most important, but it is being mined at an astonishing rate; in 1846 only five million tons were

¹ "The Conservation of Natural Resources in the United States." By Charles R. Van Hise. Pp. xv+413. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1910.) Price 3s. 6d. net.

² "Report of the Conservation Commission of Maryland for 1908-9." Pp. 204. (Maryland, Baltimore, 1909.)