Barcroft, F.R.S., reader in physiology at the University of Cambridge, provided some details of the recent expedition to Peru, to study physiological effects at high altitudes, supplementing the account he gave to the Chelsea Clinical Society as reported in our columns on April 22 (p. 648). The observations were carried out in the mining town of Cerro de Pasco, which is situated in the Andes, at a height of about 14,000 feet. Mr. Barcroft noted in passing the curious fact that at 12,000 feet there were cows which gave milk, and at 13,000 feet cows which gave little or no milk; this was not a question of fodder, because fodder was brought to the animals, and still they gave no milk. At 15,000 feet there were neither cows nor milk. Another point of interest was that fleas disappeared at 11,000 feet, though the louse accompanied man to a higher region. The Andes were chosen for this expedition for two reasons. The less important was that, unlike the heights on Teneriffe, to which the lecturer had previously gone as a member of an expedition, water was obtainable, by means of a water tower on the railway, right up to the level at which the work was done, and water, of course, was the first essential of the laboratory. The second reason was that in this case, instead of a mountain solitude, there was a community which had been acclimatized for generations to life at these levels. The people in this region were interesting ethnologically: they might loosely be called Indians, and their civilization, such as it was, probably dated back to before the days of the Incas. Many of them lived in chimneyless and windowless houses; they had a purely communal system of government, and some of their customs would hardly appeal to more civilized races. When a native was very ill, for instance, the date of his funeral was fixed without reference to his convenience, and an official saw to it that he was ready to keep the appointment! It was remarkable what loads the people were able to carry at these altitudes. A boy of about 13 would carry from the interior of a mine a burden of 40 pounds, ascending a staircase with it from a point 250 feet below, while a full-grown man would carry a hundred pounds of metal! yet the European was out of breath if he carried his coat up a slight incline. Even the native, however, only accomplishes the work with great panting and with many intervals for rest. X-ray photographs of the chests of some of the natives showed that the ribs started almost horizontally and went round the chest like the hoops of a barrel. According to tables of chest measurements in relation to the length of the spine, the natives in this region should have a chest measurement of less than 80 cm, whereas their usual chest measurement was 90 cm. The native who was 5 feet 2 inches in height had a chest which should belong to a man of 5 feet 11 inches. Mr. Barcroft dealt also with blood changes. The immediate effect of the ascent was greatly to increase the number of red blood corpuscles, and although this excess was somewhat reduced later, the blood of members of the expedition showed throughout a larger proportion of young blood cells than normal. Comparative X-ray photographs showed also that the heart tended distinctly to become smaller. Mr. Barcroft closed by appealing for the establishment of some institute and laboratory which should continue permanently the study of the physiological effects at high altitudes.—*British Medical Journal.*

SCIENTIFIC BOOKS

BOOKS ON NATURAL AND UNNATURAL HISTORY

How and Why Stories: JOHN C. BRANNER. Henry Holt & Co., New York.

Interesting Neighbors: OLIVER P. JENKINS. P. Blakiston's Son & Co., Philadelphia.

The Earth and Its Life: A. WADDINGHAM SEERS. World Book Company, Yonkers-on-Hudson, New York.

I find on my desk three little books of natural and unnatural history, as different as possible, one from another, but each wholly admirable of its kind. Branner's *How and Why Stories* represent the efforts of wise old negroes on his father's plantation in East Tennessee to account for the ways of common animals as seen against a Biblical background. The various tales are as racy and quite as remarkable as the Georgia adventures of Brer Rabbit as related by Joel Chandler Harris. In them,

much as in *Paradise Lost,* Ole Nick takes the part of hero though he stands in the foreground only when mischief is to be accomplished as when he paints some of the Good Lawd's sheep and men black while the Creator was busy in the dining room after a hard day's work. So "dey come out culled all 'cep'n de pams o' dey han's an' the bottoms o' dey feet, an' de bran' new sun done make dey hair kinky 'cause it was so hot. But after all, honey, dey's all white on de insides, des lak othah folks, an' dey chilln dey's all des de same way."

The reason "why the snake has no feet" will interest students of evolution. It appears that Ole Nick was snooping around the wall outside the Garden of Eden, finally boring a hole through, thereby wearing "about an inch off de end of his ole tail." Through this hole he coaxed the snake, then a lizard, to thrust his nose, which Ole Nick seized "an' he pull so ha'd dat he scraped all fo' o' de snake's laigs clean off, an' he pull an' stretch his body out so long dat when he was all thu' de hole he look jes' like a piece of rope."

The moral attached to each tale is unique. In this case "dey don't no good come o' listening to de debble. He's allus ready to promise you mo'n he can do, and to tell you things he don't know nothing about."

As to the origin of this species of folk-lore, Dr. Branner says that it can not be traced to Africa. "It is too clearly under the influence of Biblical history to have had such an origin."

In a few trenchant words, Dr. Branner disposes of the idea that negroes were happier in slavery. It is true that on emancipation "they were inveigled away from their former homes and friends and finally left to the winds and waves of fate like so much flotsam and jetsam of the war." Returning at one time to his old home at Dandridge, he called on a beloved and trusted former slave, "Aunt Ellen." He found her "in a state of poverty and wretchedness that went to his heart." After discussing her condition, he asked her: "Don't you think you were better off as a slave?"

And this is what Aunt Ellen replied:

"De Lawd bless yo' soul, chile, dat's a fac'; hit's jes lak you ben a sayin'. I knows I had mo' to eat an' mo' to wear, an' a better house to live in, an' all o' dem things, an' you all was mighty good to me; an' I didn' have none o' dese here doctah's bills to pay. But Law', honey, atter all, dah's de feelin's!"

"From that day to this I have had no more to say in favor of human slavery."

The book is admirably illustrated, the serious pictures by William S. Atkinson, the zoological artist of Stanford, and the cartoons—not less excellent—by Richard K. Culver, both former students of Dr. Branner.

In *Interesting Neighbors* Professor Jenkins has given a model of what "Nature Studies" for children should be. Taking familiar animals, mostly insects, and various wild flowers, he leads the reader along to the observation and interpretation of phenomena that ought to be familiar. Anywhere and everywhere he finds unexpected adaptations and relations of cause and effect, for every fact in Nature has somewhere a cause behind it.

The "Magic House" is the oak-gall, which sacrifices a leaf to make a safe home for the babies of the gall-fly, thus secure from depredations of the flycatcher, the tree frog and predatory insects. Many other insects are treated in similar fashion, their life histories accurately described and in such fashion that children of any age will be interested, and those not case-hardened will be eager to verify. And to induce them to do this is the purpose of this charming book, which will not suffer in comparison with the works of Fabre. Atkinson's illustrations are admirable.

The Earth and Its Life is a compact record of the story of Evolution from the lowest Protozoan up to civilized man. It is written in simple and interesting fashion and so far as the limits of space permit, the conclusions are fairly represented. Little effort is made, however, to define the factors in organic evolution, the processes in operation day by day, the knowledge of which gave reality to what before Lyell and Darwin was merely a philosophical conception. The last seven of the eighteen chapters are devoted to the evolution of man, a matter of increasing scientific interest as the caves and gravels of the earth are becoming more and more fully explored.

DAVID STARR JORDAN

Philippine Birds for Boys and Girls: RICHARD C. MCGREGOR and ELIZABETH MARSHALL, Bureau of Printing, Manila.

Just as I finished the last line above, there came to my desk another charming book of nature study written for the children of the Philippines.

Mr. McGregor (by the way, a former student of Jenkins, Branner and myself) has been for years the ornithologist of the Bureau of Science in the islands and is author of a valuable "Manual of Philippine Birds." In this small book he gives simple, intelligible life histories, mostly accompanied by colored plates, of thirty of the most striking birds of the region. Among the most notable is the edible-nest swift (*Collocealia germani*) with its singular habit of locking the female in its nest of glue during incubation. When one nest is taken for "bird's nest soup," it cheerfully builds another, but, when in a hurry, it mixes sticks and moss with the glue. Most powerful of the birds of the islands is the monkey-eating eagle (*Pithecophaga jefferyi*), the chief enemy of the monkeys of the Philippine forests. "Handsome and cruel, it is large and strong and fearless. No other country in all the world has a monkey-eating eagle. It is our eagle. His picture would make a good symbol for a flag or a school banner. It would stand for strength, industry, courage."

For such a purpose it might serve even better than our own bald eagle, "the piratical parasite on the osprey, otherwise known as the emblem of the republic" (Elliott Coues).

DAVID STARR JORDAN

SPECIAL ARTICLES

THE CONTROL AND CURE OF PARATHYROID TETANY IN NORMAL AND PREGNANT ANIMALS

Normal Animals.—In our first communication on this subject[1] we stated that we could keep completely parathyroidectomized "dogs alive indefinitely (at least two months) even when fed daily on a diet consisting chiefly of meat" by means of the intravenous injection of Ringer's solution. We have confirmed and extended this work as follows:

1. If this treatment is maintained for about forty days no further injections are necessary, especially if

2. The animals are given only a moderate amount of meat and care is taken that

3. The animals do not become constipated.

After *about* forty days the animals can be put on their usual diet containing great quantities of meat without inducing tetany. In one animal we could induce the severest form of tetany on the one hundred and twenty-first day (February 22, 1922) after parathyroidectomy by feeding an excessively large amount of meat mixed with barium sulphate as a constipating agent. In fact, if this animal became constipated spontaneously on its usual meat diet more or less severe parathyroid tetany attacks would occur.

The freedom from all signs of tetany on a normal meat diet after treating parathyroidectomized animals for about forty days might be due

a. To the hypertrophy under treatment of accessory parathyroid tissue;

b. To the compensatory activity of some other organ or organs;

c. To the increased tolerance of the poison or toxins responsible for the tetany.

d. To the return to functional activity of a deranged gasterointestinal tract as part of a general paresis of the sympathetic nervous system. We have some evidence on the latter possibility.

At any rate, it is clear that the cause of the tetany is an exogenous poison or poisons derived chiefly if not entirely from the proteins (more especially the meat) of the food.

Pregnant Animals.—Parathyroid tetany is notoriously severe and fatal in pregnant animals. Eight of Carlson's[2] fifteen dogs died in "acute tetany within twelve to twenty-four hours after parathyroidectomy." The average duration of life of ten pregnant animals operated on by Werelius[3] was 1.98 days.

We used to date three pregnant animals: One early after conception; two just before

[1] Luckhardt and Rosenbloom: *Proc. Soc. Exp. Biol. and Med.*, Vol. XIX, No. 3, 1921, p. 129.

[2] Carlson: *Proc. Soc. Exp. Biol. and Med.*, 1913, Vol. X, pp. 183-184.

[3] Werelius: *Surg., Gynec. and Obstetrics*, February, 1913, pp. 141-144.