

## THE ANDES IN NORTHERN PERU

MR. N. E. PEARSON has recently returned from a trip across the Western Andes of northern Peru, where he went to collect fishes. He started in June, 1923, and went direct to Lima to secure government cooperation. After making arrangements to facilitate travel he returned to Pacasmayo, a port on the northern coast of Peru. He went by rail to Chilte and then took the regular pack train route to Cajamarca, Celendin and Balsas on the Marañon. He retraced his steps to Cajamarca, from where he descended the Crisnejas valley to Tingo de Pauca, a point on the Marañon about 25 miles above Balsas. He touched the Marañon at one other point, Guayabamba, from where he returned to Pacasmayo. On the Pacific side he collected fishes from the basin of the Rio Jequetepeque from sea level to about 4,000 feet.

The crest between the Atlantic and Pacific slopes lies at an elevation of about 12,000 feet and about 75 miles from the Pacific. A valley about three miles wide with about 9,000 feet elevation lies between the divide and the next crest east, which is higher than the continental divide. The ancient Inca town, Cajamarca, lies in the valley. A small stream runs in the valley and descends to the Marañon. Going westward after crossing the second crest the road descends rapidly to Celendin at about the elevation of Cajamarca. Celendin lies in a valley without a living stream at the time of the visit. After crossing another crest east of Celendin, the road descends very rapidly to Balsas on the Marañon. There are but two breaks in the descent where there are small valleys perched on the otherwise steep slope. Collections were made in Cajamarca and at Balsas, about 3,000 feet. There were no fishes between these two places. The Marañon at Balsas is a swift stream running in a gorge and fishing was very difficult, which probably accounts for the fact that there are no native fishermen. Fishing was more successful in the Marañon at the mouth of the Crisnejas and along that stream. This portion of the Marañon seems to be above the point reached by the large lowland fishes. Only mountain climbers and Andean fishes were taken. The boundary to lowland fishes was elsewhere found to be about 3,000 feet. A few larger lowland fishes are found in the Urubamba valley up to the bridge below Machu Picchu and in the Perené, at least to La Merced at 2,500 feet.

Not all the catch has been unpacked as yet. Those of the Cajamarca valley provide one notable species. It is *Lebiasina bimaculata*, effectively used on the Pacific slopes of Peru and Ecuador as an eradicator of yellow fever mosquitoes. There is a small subfamily of Characid fishes distinguished by

the presence of two series of teeth in the lower jaw. In one genus, *Piabucina*, the usual adipose fin of the Characidae is well developed and in *Lebiasina* not. *Lebiasina* has hitherto been taken only west of the Western Andes, *Lebiasina bimaculata* in western Ecuador and Peru, *Lebiasina multimaculata* in western Colombia in both the Atrato and the San Juan,<sup>1</sup> the former into the Atlantic, the latter into the Pacific.

The presence, therefore, of *Lebiasina bimaculata* on both sides of the Andes of Ecuador, but not at all in Colombia, is another indication that the faunas of Ecuador and Colombia are distinct and that either this species existed before the Andes of Peru attained their present height or that this species has crossed in one or both directions during the lifetime of the species.

Mr. Pearson's trip was made for the department of zoology of Indiana University. Part I of an account of the fishes of western South America<sup>2</sup> has recently been published. Part II, dealing with the fishes of Chile, is nearly ready for the press. Part III, dealing with the fishes of the Titicaca Basin, is in preparation, and the material for the fishes of the eastern slope of the Andes is collected in large part.

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## SCIENTIFIC EVENTS

### NATIONAL PARKS

ESTABLISHMENT of additional national parks east of the Mississippi River is recommended in the Annual Report of the director of the National Park Service to the Secretary of the Interior, who writes as follows:

There should be a typical section of the Appalachian Range established as a national park, with its native flora and fauna, conserved and made accessible for public travel and its development undertaken by federal funds, the report states. An untouched section of the Everglades of Florida also is suggested as being of national park importance. The Mammoth Cave area in Kentucky is regarded as a remote possibility for a national park.

It is owned privately, administered under a will, the terms of which provide that upon the death of the last-named legatee it is to be sold at public auction to the

<sup>1</sup> The details of their distribution are given in Mem. Carnegie Museum, IX, 1922, pp. 123-125.

<sup>2</sup> The fresh-water fishes of Northwestern South America, including Colombia, Panama and the Pacific slopes of Ecuador and Peru. Mem. Carnegie Mus., Vol. IX, October, 1922 (issued January, 1923), pp. 1-346, plates I-XXXVIII, C. H. Eigenmann.

highest bidder. There are only two surviving legatees, both over ninety years of age, so it may be expected that this area known the world over will be disposed of before many more years pass by. Only a purchase, either by appropriation of Congress for the specific purpose, or privately, for donation to the United States, will enable the creation of this area as a national park. It is estimated that about \$1,000,000 would be necessary for its acquisition. Bills have been introduced in Congress proposing its purchase at this figure, but as Congress apparently hesitates to establish a precedent by the appropriation of federal funds for the purchase of lands for national park purposes, it is doubtful whether it can be persuaded to favorably consider the acquisition of even the Mammoth Cave by this means. In my opinion, the only prospect is that when this estate is offered for sale at public auction some public-spirited organization or citizen may acquire it and donate it to the United States.

National parks, however, must continue to constitute areas containing scenery of supreme and distinctive quality, or some natural features so extraordinary or unique as to be of national interest and importance as distinguished from merely local interest. The National Park System as now constituted must not be lowered in standard, dignity and prestige by the inclusion of areas which express in less than the highest terms the particular class or kind of exhibit which they represent; distinguished examples of particular forms of world architecture, such, for instance, as the Grand Canyon of the Colorado, as exemplifying the highest accomplishment of steam erosion, or the Sequoia as presenting the highest form of accomplishment in natural tree growth, the wonderful *Sequoia gigantea*, or the Yellowstone as containing the greatest geyser basins of the world, or the rugged portions of the Lafayette National Park as exhibiting the oldest rock formation in America and the luxuriance of its deciduous forests.

#### NATIONAL RESEARCH FELLOWSHIPS IN PHYSICS, CHEMISTRY AND MATHEMATICS

THE Rockefeller Foundation at a recent meeting (December 5) pledged to the National Research Council the sum of \$625,000 for the maintenance by it, through the five-year period July 1, 1925–June 30, 1930, of a series of national research fellowships in physics, chemistry and mathematics. In addition the International Education Board has agreed to give special financial assistance in the case of fellows appointed to work abroad.

The council is already administering, with the financial support of the foundation, a first five-year series of such fellowships in physics and chemistry, the last appointments in which will expire June 30, 1925. The marked success of this series has led to the pledge by the foundation to support a second series in which fellowships in mathematics will be included as well as fellowships in physics and chemistry.

The National Research Council is also now administering, with the financial support of the Rockefeller Foundation, a similar series of research fellowships in the biological sciences and, with the support of the Rockefeller Foundation and General Education Board, a similar series in the medical sciences. Altogether the foundation and General Education Board have pledged or appropriated a total sum of \$2,000,000 to the council for the maintenance of four five-year series of national research fellowships. The council is convinced that these high grade fellowships, available for young men and women of proved research capacity as evidenced not only by graduate work of sufficient extent and character to win the doctor's degree, but to reveal unusual ability in research work, can do much for the advancement of American scientific investigation.

VERNON KELLOGG,  
*Permanent Secretary*

NATIONAL RESEARCH COUNCIL,  
WASHINGTON, D. C.

#### DINNER IN HONOR OF DR. BOHR

ON November 24, a group of Washington scientific men tendered a dinner to Dr. Niels Bohr, who has delivered a series of lectures on the atom in various cities of the United States.

According to the report in *Industrial and Engineering Chemistry*, Dr. Arthur L. Day, of the Geophysical Laboratory, acted as toastmaster, and F. C. Brown, of the Bureau of Standards, extended greetings to Dr. Bohr, who then spoke briefly on the great possibilities just ahead in the field of science due to recent discoveries, likening the present to the time of Newton which preceded great things in the scientific world.

Dr. Bohr was followed by P. D. Foote, who, to emphasize the size and great numbers of atoms, pointed out that if the molecules in a tumbler of water could all be labeled for later identification and the water were then mixed with all the water in the world, including the moisture in the atmosphere, and if after thorough mixing the tumbler were again filled, it would contain two thousand of the original molecules. Further, on the day of the dinner German paper marks were quoted at about sixty cents per trillion, and yet one paper mark would buy three billion gold atoms or sixteen thousand atoms of radium.

C. G. Abbot discussed the atomic theory as applied to the spectrum of the stars and F. G. Cottrell stressed the necessity of understanding the latest atomic and molecular theories in order to make real progress in the fixation of nitrogen, and said that the work of Dr. Bohr had set the pace. C. F. Marvin remarked that the study of the weather had not been reduced to such a fine point that atomic and molecu-