THE TACONIC AND APPALACHIAN OROGENIES IN THE HUDSON RIVER REGION

NORTHWARD from Kingston, New York, folding caused by the Appalachian orogeny trends about N–10–E, and unfortunately this direction is also parallel to the axis of Taconic (Ordovician) folding. Therefore, in this part of the Hudson River region, although the Ordovician formations were affected by at least two orogenies, geologists have heretofore been unable to find evidence, in trend lines or other structural features, that the Appalachian folding cuts across the earlier Taconic deformation.

Since cleavage gives an excellent clue to the type and direction of regional stresses, it was thought that a careful study and comparison of cleavage in the Ordovician with that in the Devonian formations might help to distinguish the Taconic and Appalachian orogenies.

Near the axis of Taconic folding, just west of Mount Washington, cleavage in the schists has a strike of N–10–E over a wide area. Along the Hudson River, wherever cleavage is well developed in the Normanskill (Ordovician) grits, it also has a strike of N–10–E.

The Esopus and Schoharie grits (Devonian) are usually within a mile of these Ordovician beds. Cleavage readings were taken at most of the good Esopus and Schoharie outcrops along the strike for some forty miles. It was found that, wherever well developed, the cleavage almost invariably had a trend of N 25–30 E. This cleavage must have been developed by stresses later than the Taconic; and it is noteworthy that the trend corresponds exactly to that of the Appalachian folding, farther south.

It, therefore, seems logical to assume that much of the deformation in the Ordovician beds along the Hudson River has been caused by the Appalachian rather than the Taconic orogeny. Moreover, a careful study of cleavage appears to offer the best means of unraveling the complicated structure of this region.

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CULTIVATED APPLE CHROMOSOMES

IN a recent article on the chromosomes of cultivated apples[1] some eighteen varieties were classified as being either diploid or triploid, and a definite correlation between chromosomal number and meiotic behavior was pointed out.

There has been considerable interest in the problems presented by the larger groups of the Rosaceae, and discussions concerning the Pomoideae have centered about the relationship between "ploidy" and pollen sterility, chromosomal pairing and the origin of the tribe on the basis of chromosomal numbers and behavior.

Because of the interest in the cytology as well as because of certain practical values for the breeder and grower of apples, it has seemed feasible to extend the observations to include certain varieties which are listed herewith.

Baxter	n – 17, 2n – ca. 34
Kinkead	n – 17
Mann	n – 17
Mother	n – 17, 2n – ca. 34
Opalescent	n – 17
Rolfe	n – 17, 2n – ca. 34

It will be apparent that these varieties are all diploid. The correlation between diploidy and regularity of chromosomal behavior in meiosis, noted in diploids studied previously, has proved to be a characteristic of these diploids.

The technique employed was that of the previous investigation, namely, fixation with Carnoy's fluid and embedding in celloidin.

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A HYPOTHETICAL "SANCTUARY" FOR OCEAN-DWELLING SEALS

A RECENT leaflet, signed by C. W. Hobley, secretary of the Society for the Preservation of the Fauna of the Empire, states that the Newfoundland sealing industry "is steadily declining" and that "this spring (1934) about eight ships went out and some 248,000 seals were killed."

He urges that an expedition "should be dispatched with qualified scientific observers, to study the bionomics of the two species involved (*viz.*, Hood and Harp seals) and further as an outcome of their observations to make recommendations regarding a sanctuary, and possibly some protection for immature animals."

The two kinds of seals mentioned—*Harps* and *Hoods*—are pelagic animals. They live in the open sea, and in early spring (usually March) resort to the Arctic ice floes—mainly those in the North Atlantic between Labrador and Greenland—to give birth to their young.

These great ice packs are steadily moving southward, steadily melting and soon disappear, and the seals, old and young, take to the open ocean—and as a rule are not again seen until the following year. They do not normally visit land but spend their entire lives in the sea, except for the brief period in early spring "when a still small voice within" invites them to visit the ice fields for purposes of procreation.

[1] Muriel V. Roscoe, "The Chromosomal Constitution of Certain Cultivated Apple Varieties," *Jour. Genetics*, 28: 157–167, 8 figs., 1933.

These being the facts, why should an expedition "be dispatched with qualified scientific observers to study the bionomics of the two species involved . . . and to make recommendations regarding a Sanctuary and possibly some protection for immature animals"?

Where, except on the Arctic ice fields where they whelp their young, could an expedition go to find either Harps or Hoods? And where could a sanctuary be established except on floating ice—ice that is melting and soon disappears in the wide ocean?

Had the author looked into the natural history of the American seals or the literature of the seal fishery, he would not have said: "It appears probable that the coast of Labrador is the breeding region and that the herds thence migrate south and southeast to the western and northern coasts of Newfoundland"—for he would have learned that these seals (Harps and Hoods) breed on the ice floes and—unless wounded by terrestrial or aquatic sharks—rarely visit the land at any time.

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LAGUNITAS, CALIF.

SPECIAL CORRESPONDENCE

EXPEDITIONS OF THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES

WITH twelve expeditions in the field, ranging east and west from Tibet and Siam to Africa, and north and south from the Arctic to Bolivia, the Academy of Natural Sciences of Philadelphia is sponsoring one of the most extensive exploring and collecting programs undertaken since its establishment 122 years ago.

George Vanderbilt, of New York, is leading an expedition which has left Nairobi, British East Africa, for a five-month journey through central Africa to Timbuctoo, thence across the Sahara desert by tractor-truck to Algiers. With Mr. Vanderbilt are James A. G. Rehn, curator of the department of entomology, and Harold T. Green, curator of museum exhibits, and Baron von Blixen, the well-known African explorer. Among the animals sought are the bongo, a large antelope with most spectacular markings; the okapi, of which no museum has a mounted group; the giant eland, addax, scimitar-horned oryx and dwarf buffalo.

Brooke Dolan, II, of Philadelphia, will spend more than a year in the wilds of western China and the Tibetan borderland, collecting birds, mammals, fishes and plants. In 1931 Mr. Dolan made a similar expedition. He is now forming his caravan of yaks and coolies at Chungking, some 1,200 miles up the Yangste River from Shanghai, preparing for the 500-mile overland journey to Batang. The party includes Ernst Schaefer, zoologist, who accompanied Mr. Dolan on his first expedition and helped to secure the unique giant panda group now on display in the museum, and Marion H. Duncan, for many years a resident in Batang.

Through the courtesy of the Chinese government, this expedition will explore regions seldom, if ever before, visited by white men. Among the high peaks of the northeastern Himalayan range it will be necessary to reduce the packs to a minimum weight, hence the members of the party will depend for food largely on native game and yak's milk, with limited allowance of chocolate, coffee, sugar and cheese for variety. As gifts for a Chinese mandarin who aided his former expedition, Mr. Dolan is taking along two magnificent great danes from near Philadelphia, with the hope that they may be successfully crossed with the large and powerful Tibetan dogs which abound among the nomad tribes.

After four years of intensive work in Peru, making a study of the distribution, sources and relationships of the birds, M. A. Carriker, Jr., of the department of vertebrate zoology, now is extending his work into Bolivia, under a grant from the American Philosophical Society. His activities during the next six months will be confined to the northern part of Bolivia, covering a range from snow-line in the Andes to the level of the Rio Beni. Mr. Carriker is accompanied by his son, Melbourne R. Carriker.

To secure specimens of wapiti (American elk) and pronghorn antelope for habitat groups in the North American Hall, two trustees of the academy, Prentiss N. Gray, of New York, with his son, Sherman, and R. R. M. Carpenter, of Wilmington, Delaware, with his son, R. R. M. Carpenter, Jr., will spend six weeks in Wyoming, making their base at Mr. Gray's cattle ranch in the historic Jackson's Hole. They will be accompanied by C. Clarke Rosenkranz, artist of the staff, who will make color sketches of the group backgrounds, and collect plants, grasses and other natural accessories for the foregrounds.

These two animals, now reduced to mere remnants of the former vast herds, are among the most striking of North America's original game resources. The wapiti, which once ranged from Connecticut westward to California and northward from Tennessee and Texas to Ontario and British Columbia, is the largest member of the deer family, the bulls sometimes standing more than 5 feet at the shoulder, with magnificent antlers sometimes more than 5 feet long, with a spread up to 70 inches. As late as the early part of the last century there were large herds of elk in parts of Pennsylvania and New York, being so numerous in the Keystone state that Elk County was named for