

that funds may come from some source to set up still a fourth solar station.

The Smithsonian Institution has no intention of making public forecasts. That is the province of the Weather Bureau. But it is hard to see why an honest effort to test the value of hitherto unused data for forecasting purposes should receive anything but kindness from meteorologists.

Yours faithfully,

C. G. ABBOT,  
Acting Secretary

SMITHSONIAN INSTITUTION  
SEPTEMBER 1, 1925

### TERTIARY GLACIATION IN WYOMING, COLORADO AND UTAH<sup>1</sup>

SINCE 1914 the origin of erratic boulders up to twenty feet long on Green Mountain and elsewhere in Central Wyoming, at altitudes of about 8,500 feet, had been an unsolved problem until June, 1925, when definite evidence was found of glacial deposits of mid-Tertiary age. A fresh grade on the state highway five miles west of Alcova, Wyoming, exposed good glacial débris with boulders exhibiting excellent striations and scoured faces. This débris definitely occurs beneath the White River formation, classed as Oligocene. Elsewhere in the Sweetwater Valley the glacial boulders rest on Eocene formations.

The glacier leaving these big erratic rocks originated on the Wind River Mountains and extended at least 125 miles toward Casper.

Definite glacial débris nearly 1,000 feet thick on Diamond Peak, Colorado, and Uinta quartzite boulders twenty feet long, showing grooved flat faces, on Aspen Mountain, Wyoming, prove the glacial origin of the Bishop conglomerate, which is older than the Brown's Park and younger than the Green River formations. The Bishop occurs all around the Uinta Mountains.

The smoothed outcrops of the pre-Cambrian granite near Encampment, Wyoming, and boulder beds beneath the North Park formation at Walcott indicate mid-Tertiary glaciation off the Medicine Bow Range.

Large boulders with peculiarly flattened faces, as if ice-scoured, at the bottom of the Castle Rock conglomerate and on Green Mountain are thought to be traces of the same glacial epoch in the Denver Basin.

The possibility of the Kingsbury conglomerate and other singular boulder deposits in the Rocky Mountains being a phase of this glaciation is recognized, which when carefully studied will perhaps prove extensions of the discovery of an important epoch of glaciation in post-Eocene and pre-Miocene time, and

<sup>1</sup> Preliminary communication.

if certain beds are Oligocene, then it is also pre-Oligocene.

C. J. HARES

CASPER, WYOMING

### AN OBVIOUS NEW CASE OF POLYEMBRYONY

MORPHOLOGISTS in general are so greatly interested in polyembryony that all new cases should be advertised.

In the August, 1925, number of the *Journal of Economic Entomology*, Mr. S. J. Snow, of the Bureau of Entomology, in an article entitled "Observations on the cutworm, *Euxoa auxiliaris* Grote, and its principal parasites," records the rearing of an encyrtid parasite of this cutworm which is, very obviously, polyembryonic, since from 1,068 to 1,511 individuals were reared from a single cutworm.

The species is *Berecynthus bakeri* Howard. The observation is not surprising, since this parasite is related to the *Copidosoma* originally studied by Marchal, although it has a very different *facies*.

Incidentally, attention should be called to J. Waterston's paper entitled "A new polyembryonic encyrtid, *Copidosoma tortricis*, a parasite of *Tortrix comariana*," published in the *Annals of Applied Biology* for September, 1922.

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### THE "HARMLESS" CORAL SNAKE

ERROR as well as truth has the faculty of repeated rising after frequent crushing. Certain misinformation has such capacity for harm that the task of the cynic becomes indistinguishable from that of the philanthropist and at the reappearance of the hoary falsehood of the harmless coral snake it becomes meet, right and our bounden duty to do all that in us lies to blast it as publicly as possible.

Some twenty-five years ago Kipling wrote "Rhingelder and the German Flag," a story of a collector in Venezuela who, misled by the published statement of an American authority, thought nothing of being bitten by a coral snake and so died. His last bitter words as he felt his arm and realized his position might serve as a text. "It is genumben to der claviele. I am a dead man, and Yates he haf lied in print."

In Newman's recent "Vertebrate Zoology," on page 257, there is the following statement: "The coral snakes are said to be extremely poisonous, but their biting apparatus is so constructed that they can not open the mouth wide enough to bite a human being so that they may be set aside as harmless, so far as man is concerned."

The facts are as follows. Even newborn snakes can open their mouths wide enough to bite a man's finger and the theory that a grown coral snake can not bite a man is *a priori* ridiculous, even setting aside recorded instances of their so doing. Willson (Archives Int. Med., 1908, 1, p. 516) has collected records of 740 cases of snake bite in the United States. The harmless coral snake, unable to bite a human being, actually bit eight human beings, of whom six died, making a mortality of 75 per cent., as against 408 cases of rattlesnake bite, of whom forty-eight died, a mortality of under 12 per cent. The coral snake is therefore over six times as deadly as a rattlesnake, and, while they seldom bite people on account of small size and secretive nature, yet they are potentially the most deadly animals in the Americas.

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### SCIENTIFIC BOOKS

*Anatomy and Physiology of the Honeybee.* By R. E. SNODGRASS, Bureau of Entomology, first edition, xvi + 326 pp., 109 figs. New York: McGraw-Hill Book Company, 1925.

IN 1910 Snodgrass prepared for the Bureau of Entomology a bulletin (Tech. ser. 18, 162 pp., 57 figs.) entitled "The anatomy of the honeybee." The edition of this bulletin was limited by the restrictions unfortunately placed on certain departmental publications solely because of their size, and the supply was soon exhausted. Since that time there has been a limited but constant demand for copies of this bulletin, which could not be supplied, and finally the author was induced to rewrite and enlarge the portion on anatomy, to include the results of the more recent investigations on the functions of the various organs and to issue the result in book form. The present work is the result. While it is designated a first edition, it is actually an outgrowth and enlargement of the earlier bulletin.

In this book the number of figures is doubled and the text is approximately twice the size of that of the bulletin. Most of the figures formerly used, many of which contain several drawings, have been retained and many new and original drawings now appear. An extensive bibliography is appended, listing especially the more important papers in this field published within the past decade, but noticeably omitting some older works which have served to confuse rather than to advance our knowledge of the anatomy and physiology of the honeybee. Developmental stages are included, based chiefly on the work of Nelson, who worked in the same laboratory. Other investigations

of the bee culture laboratory of the bureau form an important part of the new material.

Morphology is no longer a phase of biological investigation to which most workers are attracted, yet it will be admitted that a sound knowledge of structure is essential as a foundation to satisfactory and reliable work in physiology and behavior. The author of this book has rendered a real service in presenting a comprehensive and thoroughly dependable manual of honeybee anatomy. The anatomy of almost no other animal aside from man himself has been the subject of more books and papers than has that of the honeybee, yet unfortunately many and perhaps most of the previous authors in this field have lacked a knowledge of comparative anatomy of insects and as a result have in too many cases given fanciful interpretations and incongruous names to the things recorded as observed. It is therefore a pleasure to welcome a book which does scientific justice to its subject and which is based on a well-grounded knowledge of comparative anatomy. This method of approach, as the author points out, "makes acquaintance with the bee in the end not only easier but more interesting, since to a knowledge of facts it adds understanding."

In this book, however, the bee is a living thing. The short life of the honeybee and its specialized colonial life make physiological experimentation difficult, so that a considerable amount of our knowledge of its physiological processes have been derived by deduction from studies of morphology and by analogy from studies of allied species. The physiological processes of insects have in too many cases not been thoroughly investigated, but in so far as this has been done for the honeybee and allied species, the author has included a comprehensive account of the investigations of others and has included certain new investigations of his own. His work on the so-called fat body is especially interesting. Most of the physiological work mentioned has been done within the past decade. In so far as investigations would warrant, there is a discussion of the cytology of parthenogenesis and inheritance in the honeybee. The work on the structure and functions of the sense organs is especially well done, and the author has corrected certain errors in morphology which have appeared in earlier work on these organs. Various phases of the behavior of the bee are discussed, where the behavior centers about certain organs, although a discussion of bee behavior is not part of the plan of the book. It is needless to itemize the various subjects discussed aside from stating that they are just what one expects in a book with this title.

The important facts to record concerning this book pertain primarily to the qualifications of the author