eral millions of years old, it appears to belong to the living genus *Corydoras,* and may be known as *Corydoras revelatus* n.sp. It is 27 mm long from end of snout to base of caudal fin, the total length at least 31 mm; depth at base of dorsal slightly over 9 mm; width of orbit 2 mm; orbit from top of head 1.8 mm, from end of snout 3.5 mm; lateral plates numerous, certainly over 20 in each series; dorsal spine very strong, anal spine weak. In the deep body, arched profile of head, and rather large eye it resembles *C. paleatus* (Jenyns), a species discovered by Darwin on the voyage of the *Beagle.* The eye appears to be placed lower down, but this may be the result of crushing. The opercular plate agrees with that of *C. paleatus* and other species, having the lower posterior margin concave. The dorsal spine is very heavy, suggesting *C. armatus* (Günther), but there is no evidence that the soft rays are prolonged to a point.

The discovery of this fish, together with that of the accompanying insects, shows that the variegated green and red shales of this part of Argentina belong to the Tertiary, possibly late Tertiary, and are of freshwater origin. This is a matter of considerable importance as the age of the beds was somewhat in doubt. The discovery of fossil insects in these rocks is due to Mr. Geo. L. Harrington; my wife and I visited the locality and obtained many species.

Corydoras still lives in the same region; thus *C. micracanthus* of Regan was discovered at Salta.

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TOBACCO AND TOMATO MOSAIC

(1) LONGEVITY OF THE VIRUS OF TOBACCO MOSAIC

IN February, 1920, I received from Dr. H. A. Allard for comparative tests a small bottle of expressed juice from mosaic-diseased tobacco plants. It was unfiltered and protected from contamination by a layer of toluene. A small portion only was used at the time and the remainder tightly corked and set aside.

On May 25, 1925, four healthy plants were inoculated by rubbing two leaves of each with a small portion of the preserved juice. Two check plants were treated similarly, using sterile water. The plants were kept in a good light in the laboratory. On June 15 each of the four plants was definitely mosaic-diseased, while the two check plants were perfectly healthy, as they have remained to date.

On June 25 four other healthy plants six weeks old were similarly inoculated and left in the greenhouse, while check plants were again treated with sterile water. On July 10 each of the four inoculated plants was showing excellent mosaic symptoms, while checks were healthy.

It is therefore a fact that the expressed juice of mosaic-diseased tobacco plants retained *in vitro* over five years is still infectious.

(2) STREAK OF TOMATO IN QUEBEC A "DOUBLE-VIRUS" DISEASE

Mr. T. C. Vanterpool, working in my laboratory, has been studying "streak or stripe" disease of tomato since 1923. Diseased plants and those artificially inoculated with "streak virus" often tend to outgrow streak symptoms in the upper straggling part of the plant, but they always present mosaic symptoms in those parts. Further, the virus of tomato streak inoculated into tobacco always gave mosaic, and a transfer from that tobacco often reproduced streak in tomato. The possibility of double inoculation was therefore considered, and the following summarized facts cover the work done this season in both greenhouse and field.

Healthy tomato plants inoculated with a mixture of viruses from mosaic-diseased tomato and potato, or tobacco and potato, develop streak in about fourteen days. Mosaic-diseased tomato plants inoculated with virus from mosaic-diseased potato develop streak. Virus from diseased potato gave rise to doubtful mosaic in healthy tomato. Juice from a tobacco plant showing mosaic after inoculation with tomato and potato mixed virus developed streak when inoculated into healthy tomato.

Combinations of bean mosaic and raspberry mosaic viruses with tomato mosaic virus gave negative results.

From the above results it may reasonably be concluded that in Quebec streak or stripe of tomato is not a disease caused by *B. lathyri* but is a disease resulting from double inoculation, *i.e.,* with virus of potato mosaic and tomato mosaic (tobacco mosaic in this case being considered the same as tomato mosaic). Further work may show that other host plants function as potato, and more work is required to determine the proportions of the two juices necessary to develop streak of tomato.

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SEX CHANGES IN BIRDS

IN Science News Service, as printed in your issue of SCIENCE, March 6, 1925, appears an article relating to the changing of sex in pigeons. The observations of Dr. Oscar Riddle, of Carnegie Institution of Wash-

ington, are given and his deductions are most interesting.

Shortly after reading this article the undersigned came across an old book, printed in London in 1859. This book's title is "Ten Thousand Wonderful Things, Marvelous, Rare, Curious and Quaint." It was compiled by Edmund Fullington King, and is made up of short articles of historic, scientific and otherwise curious phenomena. On page 189 of this book appears the following account of what is described as "An extraordinary problem" with reference to the changing characteristics observed in gallinaceous birds. The article follows:

A CHANGE IN SEX

Connected with the plumage of birds is an extraordinary problem which has baffled all research, and toward the solution of which not the slightest approach has been made. Among certain of the gallinaceous birds, and it has been observed in no other family, the females occasionally assume the male plumage. Among pheasants in a wild state the hen, thus metamorphosed, assumes with the livery a disposition to war with her own race, but in confinement she is spurned and buffeted by the rest. From what took place in a hen pheasant in the possession of a lady friend of the late Sir Joseph Banks, it would seem probable that this change arises through some alteration in the temperament at a late period in the animal's life. This lady paid particular attention to the breeding of pheasants. One of the hens, after having produced several broods, moulted and the succeeding feathers were exactly those of a cock. The animal never afterward laid an egg.

The pea hen has sometimes been known to take the plumage of the cock bird. Lady Tynte had a favorite pea hen which at eight several times produced chicks. Having moulted when about eleven years old, the lady and her family were astonished by her displaying the feathers peculiar to the other sex and appearing like a pied peacock. In this process, the tail, which was like that of the cock, first appeared. In the following year she moulted again and produced similar feathers. In the third year she did the same, and then also spurs resembling those of the cock. The bird never laid after this change of her plumage.

This paragraph in this old book, printed seventy years ago, only goes to prove that there is "nothing new under the sun," although those who observed the phenomena at that day were unable to account for it to the extent that Dr. Riddle has.

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ANTI-EVOLUTION PROPAGANDA IN GEORGIA

THE following extract from the letter of a friend teaching in Georgia, one whose name carries a Ph.D. degree from the University of Wisconsin and whose reputation for veracity is excellent, may help to explain why the people of Georgia failed to support the recent anti-evolution bill brought before their legislature.

My friend with a perhaps improper curiosity had attended a negro church service during the month of July. I now quote:

> The preacher spoke somewhat as follows: "As long as they said us coluhd folks was descended from ape-like animals nobody didn't say nothing. But that's because their hearts wasn't pure. And when Darwin came along and said folks in gen'l was descended from a fossil, then nobody didn't like it. But his heart wasn't pure. And then Voltaire came along and said it too, but nobody didn't pay no attention to him because his heart wasn't pure. And then Thomas Payne came and said we was all descended from fossils. But he didn't make no headway, cause *his* heart wasn't pure. And in Tennessee, Bryan and Darrow and those folks won't do no hurt, for their hearts isn't pure. The Bible don't say we's descended from fossils."

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SCIENTIFIC BOOKS

Dynamische Meteorologie. By F. M. EXNER, professor of geophysics at the University of Vienna and director of the Central Institute for Meteorology and Geodynamics. 2d Edition, much enlarged. 421 pages, with 104 figures in the text. Vienna, 1925, Julius Springer.

ANY contribution from so careful and conscientious an investigator as Exner is worth having, and the present volume should be in the hands of every serious student of what formerly was called dynamic meteorology; but is now more generally termed aerography—the structure of the atmosphere.

The book first appeared in 1916 and evidently suffered from the loss of touch with British and American progress. The war certainly did advance our knowledge of air structure, even if we consider only the instrumental side of the problem. In one of his papers before the Royal Meteorological Society (April, 1919), Sir Napier Shaw said:

> It may be that in the near future no meteorological observatory will be regarded as really complete if it does not possess a cinematograph camera, a searchlight, a range finder and a chronograph, besides a kite balloon, a gun and ammunition, and crews to use them.

There is a decided flavor of war-time experience in the above; and in time of peace we can dispense with some of these; but on the other hand there are new