

cent paper Darlington⁵ (1931) simply ignores these difficulties and has to assume several improbable hypotheses to account for the absence of crossing-over in the *Drosophila* male. All these genetic phenomena are easily and logically explained on the theory that crossing-over is due to breaks in chiasmata (Sax, 1929). The genetic analysis of chromosome behavior in *Drosophila* as developed by Morgan and his associates is a far more precise and accurate tool for the analysis of chromosome behavior than any method now available to the cytologist. Any theory of crossing-over which does not meet the strict genetic requirements can not be considered seriously.

Darlington also states that my "genetical remarks" . . . "are vitiated as evidence by his using the word chromosome in three different senses." In the paragraph referred to the term chromosome was not confined to one particular phase of meiosis, as should have been the case, but by no consistent or logical method of reasoning would it be possible to conclude that the word chromosome was used in three different senses or that the genetic evidence is vitiated.

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THE DIVINING ROD AND FAKERS

I READ with much interest articles in *SCIENCE* as to belief in the efficacy of a divining rod. My explorations have taken me throughout the West and the South for nearly forty years. We have frequently tried experiments, or rather permitted those who have faith in "rods," to test for buried objects. I have never, in all my experience, known a single instance in which the test was of either practical or scientific value.

To be specific: During the exploration of the Cahokia Mounds, southern Illinois, there was much publicity, hence various persons with divining rods appeared. One man's apparatus was different from the usual forked stick. It consisted of a sphere about the size of a baseball at the end of a leather thong. This contained certain ingredients which were "secret" and he claimed the ball would oscillate over treasure as well as Indian remains. We afforded him facilities—the test was a failure. A rather wild-eyed individual appeared and told me that if I would give him a "thigh bone of a big Injun" he could lay hands on said bone and thus come in contact with the Indian's spirit. He was assigned quarters in a tent for a few hours, left in seclusion, and loaned a femur. I asked him afterwards how he, speaking English, could communicate with a prehistoric Cahokian. His

reply was that all people in the spirit world spoke the same language!

The next season a middle-aged woman appeared and claimed ability to commune with departed Indians "now residing in the spirit world." My assistant and a workman were inclined to make sport, yet we gave her a tent and table at her request. She communed for two hours. Then she announced that we would make a great discovery somewhere within 2,000 feet, but was not specific. The price to locate accurately was ten dollars!

Some weeks later a man appeared who claimed that he was an astrologer, contended that he had spent numbers of moonlight nights wandering over the Cahokia Mounds, that said mounds were orientated according to certain stars, etc., that if we would employ him he would spend clear nights, when stars were visible, in his studies. He entered into a lengthy and somewhat erratic explanation, the upshot of which was that there were certain points where lines drawn from one star to another crossed, and the point exactly beneath [on earth] would yield important archeological specimens, etc. He was very insistent but could not designate any precise spot in which we should excavate. He also desired pay.

In southern Ohio a "Hill Billy" appeared in our camp with the usual divining rod, and was given a thorough test. We sent to the bank and got \$25 in silver. We buried it secretly a few inches below the surface, scattering dead leaves, removing all fresh earth. The ball would sway at various points but didn't move when our friend passed over the "buried treasure."

At Cartersville, Georgia, a man came to our camp with his "divining rod" talk and begged for a chance to exhibit his prowess. He remained with our party two days and was given two or three men with shovels to excavate wherever he indicated. It seems that the other men made sport of their comrades who accompanied "Mr. Divining Rod" and, therefore, to keep peace in my field party it was necessary to detail a fresh crew each half day! Many test pits were sunk, nothing was found, but the owner always had the same excuse of any other person with a divining rod, *i.e.*, that the treasure was further down. In brief, each one had a good alibi. In instances where we struck ledge or boulder clay, or outcrop of limestone, etc., the explanation was the same.

In every instance, in several states, I kindly explained to these people afterwards the utter futility of such efforts. Each one, however, had supreme faith in his divining rod. Our friend in Georgia, who was with us longest, a simple-hearted and ignorant man whose family, I was informed, was in need, listened with some impatience when I urged that he throw away his rod and go to work. He answered

⁵ C. D. Darlington, "Meiosis in Diploid and Tetraploid *Primula sinensis*," *Jour. Gen.*, 24: 65-96, 1931.

in words which would apply to all these people, "Mister, I might give up my house, or even the old woman, but I ain't going to give up the divining rod. Some day it will make me rich!"

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THE VISIT OF DR. JAKOB E. LANGE

DR. JAKOB E. LANGE, well-known Danish student of the mushrooms, will arrive in New York the middle of August for several weeks of collecting in the northeastern United States and eastern Canada. He wishes to study especially the parallelism and identity of American and European species of Agaricaceae. A definite itinerary has been arranged. Inquiries regarding its details may be directed to Dr. C. W. Dodge at Pawlet, Vermont.

From August 28 to September 2 inclusive Dr. Lange will be at Ithaca, New York. The region about Ithaca is especially interesting to him because Atkinson published over a period of years on locally collected materials. Fungus forays will be made daily to near-by points of interest in the effort to see a large number of species.

In order that the conceptions of species as held by Peck, Atkinson, Kauffman and other older American workers in the group may be clearly understood, it is imperative that Dr. Lange be enabled to exchange ideas in the field with their students. To this end American mycologists, especially those interested in mushrooms, are urged to come to Ithaca and cooperate in making these forays a success. Students with only a minor interest in the Agaricaceae will also be welcomed, and the forays will be arranged in such a manner that collecting in other groups will be fruitful. Incidentally, the Atkinson herbarium has been put in good order in recent years, and is now available for consultation in the new Plant Science Building at Cornell University.

Those who plan to attend the Ithaca forays are asked to notify the undersigned at as early a date as possible. Arrangements will be made for lodging, meals and transportation at reasonable rates. Information concerning these items, or other features of the plans for the forays will be gladly given.

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REPORTS

UNITED STATES GEOLOGICAL SURVEY UNPUBLISHED LITHOGRAPHIC PLATES OF VERTEBRATE FOSSILS FOR DISTRIBUTION

Two hundred and thirteen of the lithographic plates prepared under the direction of Professor Othniel C. Marsh are now being assembled to distribute for research and educational purposes to the principal active centers and libraries of geology, paleontology and comparative anatomy in this country and abroad. The distribution is by permission of the director of the United States Geological Survey through the agency of the Department of Vertebrate Paleontology in the American Museum of Natural History. There are also the original Cope lithographic plates, some from "The Vertebrata of the Tertiary Formations of the West," some from the Cope-Matthew volume, some which have never been published.

Seventy-one sets of these assembled plates have already been sent out to various institutions in this country, seventy have been prepared for distribution abroad and three hundred and fifty are to be kept in reserve. Applications by libraries and laboratories for plates from this reserve supply should be addressed to the Curator of the Department of Vertebrate Paleontology of the American Museum.

In this connection it seems of interest and importance to review briefly the circumstances surrounding the long history of these lithographic plates which began probably as early as 1878 when Marsh was working for the King Survey and just prior to his appointment as vertebrate paleontologist of the United States Geological Survey, formed in 1879. The Marsh-Cope plates drawn on stone by Mr. F. E. Berger under the direction of Professor Marsh are masterpieces of the art of lithography which had reached a culminating point in England, Germany, France and America during the great foundation period of Leidy, Cope and Marsh, between the year 1850 when Leidy began his work and 1899 when Marsh's work was terminated by his death. No modern reproductions can compare with the beauty of Berger's original plates, so that this opportunity of securing the originals will, it is expected, be eagerly availed of, and prompt response will be given to any application.

The enumeration of the plates available for distribution and research is as follows:

The Stegosauria, 63 plates
The Brontotheriidae, 60 plates
The Sauropoda, 90 plates

On the death of Professor Marsh in 1899, Director