

Ankylosaurian dinosaurs are to be seen, but several remains of sauropods were found—some of gigantic size. Now as the Mesaverde and Judith River formations are fairly high up in the Cretaceous series it is determined that in the south, at least, climatic conditions of Jurassic times persisted well up into the upper part of the Cretaceous age, so that sauropods definitely extended through the Morrison Jurassic well up into Cretaceous times. It is our opinion that they did not exist to the very close of the Cretaceous as represented by Lance and Hell Creek times.

There is no doubt that the Glen Rose formation of Texas is Lower Cretaceous in age and in this formation we have found the first sauropod dinosaur footprints known. These tracks, of which there are several hundred, show distinctly that there were no claws on the front feet but they were unquestionably made by sauropod dinosaurs, probably an unnamed species, some of which are as large and larger than *Brontosaurus*. Similar tracks of the same character were found in Bandera County, Texas, and they have been found also in the Panhandle of Oklahoma. It is unfortunate that the article describing these tracks infers that they were made by a *Brontosaurus*. One of the characters distinguishing the genus *Apatosaurus* (*Brontosaurus*) is a single large claw on the first digit of the front feet. No tracks of *Brontosaurus* are known, but the Glen Rose tracks were definitely made by a sauropod dinosaur closely related to and of the same size as the mounted *Brontosaurus* in the American Museum and it is proposed to place a series of these tracks under the mounted skeleton in order to show the size and stride of the feet of a similar living animal.

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WESTWARD SPREAD OF EASTERN TYPE EQUINE ENCEPHALOMYELITIS VIRUS

ON the North American continent, two types of immunologically distinct viruses of equine encephalomyelitis have been recognized, Eastern type and Western type. The areas in which these virus types have been isolated have had a sharp line of demarcation defining their boundaries in the Appalachian chain of mountains. Until 1939, these limits were without exception, but in that year a few cases of both types were isolated in the state of Alabama.

On April 29, 1941, portions of a horse brain from a civilian owned animal were received by the Veterinary School, Army Medical Center, Washington, D. C., from Colonel Clifford O. Whitney, V.C., of Fort Brown, Brownsville, Texas. The specimen originated from that area southeast of Brownsville, Texas, bor-

dering on the Gulf of Mexico and known as the "Boca Chica flats." Sixty horses had recently been reported in this area as having died of suspected encephalomyelitis.

Accordingly, 0.1 cc of a 1-500 dilution of an emulsion of portions of the cerebrum and hippocampus from the specimen were inoculated intracerebrally into 3 normal guinea pigs. Within 72 hours all three had developed typical symptoms of encephalomyelitis, one died and two were destroyed while moribund in order to recover their brains.

A 1-500 dilution of an emulsion of portions of these 2 brains was then inoculated intracerebrally in 0.1 cc amounts into 3 groups of guinea pigs, one group immunized against the Western type virus, the second group immunized against the Eastern type and a third group of normal control animals.

The animals belonging to the Western immune type and the normal controls succumbed within less than 72 hours with typical encephalomyelitis symptoms, while the animals of the Eastern immune type remained normal.

Since the Western immune type guinea pigs were affected while the Eastern remained normal, this combined with the short incubation period (3 days instead of the usual 4 days for Western type virus) are certainly indicative of an Eastern type of encephalomyelitis virus.

From the foregoing, it would seem that the geographical limitation of the virus entities has now been broken down.

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THE "MEANING" OF SCIENCE

It is well for every worker in science to sometimes attempt to set up for himself his concept of the broad field of his interest. I was stimulated to such inquiry by the recent statement of L. K. Frank that there is need for definition of the "meaning" of science.

Subjectively, and from the point of view of the intension of the term: Science is the data of the relations between things; between states; and between events: and of the relations between things, states and events.

Inherent in the term "things" are qualities. Inherent in the term "states" are modes and conditions of being. Inherent in the term "events" are those happenings which occupy a restricted portion of four-dimensional space-time.

There is no need to introduce the term "ordered" as a qualifier of relations since the sense of order is inherent in relation.

If by "meaning" one wishes to mean intent, pur-