

partially eclipsed in eastern Australia. The path of the annulus will pass over the coast of the extreme northern part of New Zealand and a few small islands,

There will also be two partial eclipses of the moon in 1925. The magnitude of each of these eclipses will be about 75 per cent., that is, about three fourths of the diameter of the moon will be covered by the earth's shadow at greatest eclipse. The first will occur on February 8 and will be visible in the eastern part of the United States where the moon will rise partially eclipsed. The eclipse will take place with the moon fully above the horizon in Europe, Asia, Africa, and the Indian Ocean. The moon will rise partially eclipsed in the Atlantic Ocean, South America and eastern North America and will set eclipsed in western Australia and the western part of the Pacific.

The second eclipse of the moon will take place on August 4 and will be visible in the western part of North and South America, the Pacific Ocean, Australia, eastern Asia and the Indian Ocean.

There will be occultations of the planets Neptune, Venus and Jupiter this year and of the first magnitude stars, Aldebaran and Regulus. The only one of these visible in the eastern part of the United States, however, will be the occultation of Aldebaran on February 2 and of Neptune on February 8.

Among the planets, Mars will be visible in the western sky in the evening until August. During the year Mars will describe that part of its orbit farthest from the earth and will not be favorably placed for observation. On September 13 it will be in conjunction with the sun and farthest from the earth and after that will be in the eastern morning sky but owing to proximity to the sun will not be seen for several weeks before and after conjunction. The next close approach of Mars to the earth will not take place until November, 1926.

Venus is now a beautiful object in the eastern sky before sunrise and will continue to be so during the winter. On April 24 Venus will be in superior conjunction with the sun and farthest from the earth. She will be too close to the sun to be seen for some time before and after conjunction but will appear again in June in the western evening sky where she will remain for the rest of the year approaching the earth and increasing greatly in brilliancy toward the end of the year.

Jupiter and Saturn are now visible in the eastern sky before sunrise, Saturn is far to the west of Jupiter. It will be in opposition to the sun and visible all night on May 1, and Jupiter will be in opposition on July 10. Both planets will be in excellent position for observation in the evening during the summer and early fall, but Saturn will come into conjunction with the sun in November.

PORTRAYS INLAND OCEAN WASHING OVER AMERICA

Imagine an earthquake 200 miles wide, and stretching from one end of north America to the other. This is what happened on the west coast of this continent on at least two successive occasions, before the gigantic forces which folded and wrinkled the earth's crust were finally spent. Why geologists think these holocausts must have taken place was the story unfolded to the American Association for the Advancement of Science by Dr. Charles D. Walcott, secretary of the Smithsonian Institution and retiring president of the Association, who has just completed a study of the record of this period in geology as it is written in the fossils and formations of the Rocky Mountains. Both oceans, and a great inland sea, washed

up and down and in and out of the trough which was formed as a result of the first of these quakes. The second exposed fossils through which can be traced the evolution of plants and animals.

Dr. Walcott said: "Many millions of years ago the downward pressure of the rocks beneath the Pacific ocean forced the lighter rocks of the western Americas to fold, crumple, break and often slide in great masses over one another. A great feature was the formation of a trough from 100 to 200 miles in width, extending from the Pacific margin of the Continent.

"In this trough the waters of the Arctic and Pacific passed freely and the animal life of both oceans migrated north and south and often mingled. The rivers entering the great 'Cordilleran Trough', as it is called, brought pebbles, sand, clay and mineral matter in solution and the tidal currents and waves spread the sediments along the shores and far outover the bottom of the inland sea. This went on for countless ages, until 60,000 feet or more in thickness of sediments gathered in the deeper sections of the trough. All through the ages the marine life gradually changed as its evolution went slowly forward in the waters of the great Pacific area. Large groups of life came in, flourished for a few centuries, and disappeared, to be replaced by other and later faunas. Occasionally other forms came in from the Arctic, the interior continental seas and rarely the Atlantic Province. Great continental seas sometimes crossed the eastern barriers of the trough and swept over the area, bringing new sedimentary conditons and new life. The transgressing seas often wore away the rocks of previous ages and left a graphic story of their advance.

"After the close of the many-million-year old Palaeozoic epoch the pressure came again from the Pacific and the sandstones, shales and limestone formations of the Cordilleran Trough, were folded, broken and often pushed up into mountain ridges to form the western shore line of continental marine and fresh water seas, in which the records of the development of the vegetable and animal life from the trees ferns to the giant sequoia and the cold blooded fishes and lowly reptiles, to the warm blooded mammal and finally man."

EARTHS MAKES OWN CLIMATE SAYS METEOROLOGIST

The sun has nothing to do with determining the climate of the earth as all the changes were produced essentially by the earth itself and no matter how constant the output of solar energy certain alterations of topography and other terrestrial conditons determine climatic changes, Dr. W. J. Humphreys of the U. S. Weather Bureau told the American Association for the Advancement of Science at its recent meeting.

It is further believed that during the warmer periods of prehistoric times the land areas were relatively restricted and of small elevation with the oceanic circulation free and open to high latitudes.

The colder periods, including the ice ages, were, presumably at times when land was extensive, mountains abnormally high, and oceanic currents restricted. At such times the mountain peaks would carry many glaciers of greater or less magnitude. At a time like this, when the climate was in critical conditon, a few violent volcanic eruptions, would be disastrous. Every thick veil of volcanic dust appreciably lowers the temperature. This would lead to a greatly extended snow period during every season of the year. This cooling would be intensified by thinning the blanket of water vapor around the earth.

"In short," said Dr. Humphreys in conclusion, "the earth has produced its own climatic changes, through potent natural factors."
