completed and tested, Prof. Robert Van de Graaff and Drs. C. M. and L. C. Van Atta told the meeting.

The towering spheres that store up electric voltages in the airship hangar at Round Hill have been completed and tested for some time but the designed use of the huge equipment for atomic bombardment experiments has been delayed until the accelerating tube was finished.

The tube rests, high in the air, on a special I-beam made of bakelite-impregnated plywood. Each of its four sections contains 12 porcelain cylinders and eleven steel electrodes which gradually accelerate the particles passing down their axes from voltages supplied by the collecting spheres at each end. In use the tube is evacuated. Arrangement has been made to focus the beam of charged particles as they speed down the tube to the target so that the beam will not spread out and hit the walls of the tube with destructive effect.

Science News Letter, May 8, 1937

ASTRONOMY

Places Last Bolt in Frame Of 200-Inch Telescope

See Front Cover

THE FINAL bolt in a spiderweb of steel which will finally become the mounting for the world's largest telescope has been turned into place at the turbine plant of the Westinghouse Electric and Manufacturing Company.

Dr. Robert A. Millikan, Nobel prize winner and chairman of the executive council of California Institute of Technology at Pasadena, attended the culminating act of fitting the final part of the mounting which will have a total weight of 900,000 pounds. Thus the second stage in the fabrication of the biggest "eye" of astronomy was finished. The great glass disc for which the mirror of the huge telescope has long since been cast and is now being ground is already in the workshops of Caltech, gradually being fashioned—"figured" as astronomers say—to its proper curvature. The completed telescope: mirror, mounting, observatory building and auxiliary equipment, will cost $6,000,000 when finally put in operation in 1940. Funds were made available by the Rockefeller Foundation for the project.

The operation of the 200-inch telescope will be in charge of scientists at California Institute of Technology, and plans have been made for close cooperation with the present Mt. Wilson Observatory of the Carnegie Institution of Washington which houses the 100-inch telescope that is, today, the world's largest.

The tube of the telescope, at the bottom of which will be placed the 200-inch diameter mirror, has a total length of 60 feet—as high as a six-story building. It was made in sections, the largest of which is 22 feet wide and 12 feet high. A special annealing furnace had to be built to heat this unit after fabrication so that the internal stresses could be relieved. Although large, this piece weighs only 26,000 pounds. Heaviest unit is the central section of the horseshoe yoke of the mounting which weighs 120,000 pounds.

Oil Bearings

The weight of the entire telescope will rest, and float, on special oil bearings which will enable the instrument to be turned easily with a very small force. Previous mountings of telescopes have been on pools of mercury.

The three major units of the mountings, their size and weight, are:

1. The tube, which is 22 feet one inch in diameter and 45 feet long, with a total weight of 150,000 pounds.

2. The cage, which is 22 feet one inch in diameter and 12 feet long, weighing 26,000 pounds.

3. The horseshoe yoke and side girders, weighing 370,000 pounds, with a maximum dimension of 46 feet and a thickness of four feet.

The total weight of the mounting is 900,000 pounds, or 450 tons.

Science News Letter, May 8, 1937

The only great ape that walks erect habitually is the gibbon, which rates as the least intelligent and least man-like of the apes.

PALEONTOLOGY

NATURE RAMBLINGS
by Frank Thone

Dinosaurs—and Others

ISN'T IT ODD, how we have fallen into the habit of regarding all extinct reptiles as dinosaurs—if only they were big ones!

Dinosaurs, to be sure, probably were the dominant forms of all reptile life that has ever inhabited the earth. They really were the bosses of the land, back in the geologic ages which scientists group together under the name of Tertiary Period, which has been called for convenience the Middle Ages of animal life. Dinosaurs were both big and varied, they included both plant-eating and flesh-eating forms, they developed such fantastic extremes as the carnivorous biped tyrannosaurs, the mountain-bodied but pin-headed brontosaurs, the freakishly-horned triceratops.

But not every reptile of those far-gone days was a dinosaur. The swimming forms that ruled the sea, the plesiosaurs and the ichthyosaurs, were not properly dinosaurs. They belonged to quite distinct groups or orders of animals, just as among modern insects flies and bees belong to quite distinct groups even though they may look somewhat alike.

Similarly, the flying reptiles that for a time held the lordship of the air were not flying dinosaurs. So far as is now known, no dinosaur ever flew. These early fliers belong to a group of their own, usually called the pterosaurs, which means merely winged reptiles. Nor were the pterosaurs the ancestors of birds. Birds did originate during the Age of Reptiles, and the first birds were astonishingly reptile-like, but they came of a different ancestral stock.

The reptiles of the Tertiary included some types that are still in existence today, notably the turtles and the crocodiles. These came in all sizes. There