

octagonal instead of square by placing screens across the corners. A new one-foot wind tunnel, which provides wind speeds up to 140 feet per minute, is primarily intended for the development and calibration of instruments for measuring the speed and direction of the wind. In the duplex wind tunnel experiments are being made on a model of the Cierva autogyro, and in one of the seven-foot tunnels the conditions of the spinning of aeroplanes are being studied.

Other investigations in progress relate to high-lift wings of the Handley-Page slotted type, and to the dissipation of heat from the surfaces of wings in a wind current, the latter inquiry being in connection with the plan of enclosing the radiators of water-cooled engines in the wings with the object of reducing head resistance in high-speed aeroplanes. In the Froude tank visitors saw experiments with a self-propelled single-screw steamer, the apparatus used for measuring its speed, screw thrust, revolutions of propeller and power required for propulsion being demonstrated.

In the metallurgy department exhibits were on view illustrating the work done on light alloys, particularly of magnesium, of aluminium and silicon, and of aluminium, silicon and copper, and also on alloys for use at high temperatures. The melting of the latter is now effected in electrical high-frequency induction furnaces, gas-fired crucible furnaces having been found unsatisfactory owing to contamination of the product by oxide. For these and other investigations metals free from impurity are necessary, and there were exhibits showing what has been done in the production of chromium, manganese, iron, beryllium and silicon as nearly pure as possible, as well as in the preparation of special refractory materials for making the pots and crucibles employed in melting them. Another research which is of interest in connection with the amalgams used by dentists for stopping teeth consists in the microscopic examination of metals and alloys that are liquid, or partially liquid, at atmospheric temperatures, by polishing and etching them while they are frozen solid.

In some of these metallurgical investigations the engineering department is taking a share. It is concerned, for instance, in determining the mechanical properties of alloys intended for use at high temperatures, and another example of joint action is the research on the embrittlement of iron chains, such as are used for cranes, and the effect of heat treatment. But it has much work of its own on hand, and among other things it showed testing machines of various kinds, as for gear-boxes, spur gears, laminated springs and big-end bearings; apparatus for recording the vibrations of the ground caused by traffic; shadow-graphs of air jets from nozzles of different forms and hardness tests made with diamond cones.

Besides exhibiting mercury vapor vacuum pumps made entirely of metal, the physics department illustrated the determination of the heat conductivity of metals and other substances; the photography of sound waves and the measurement of the intensity of sound and of its transmission and reflection by partitions; and the X-ray examinations of metals and X-ray spectrometry. The new vector colorimeter was on view in the Optics Building, and methods of measuring daylight in the open and daylight illumination in various types of rooms were shown in the Illumination Building. In the main wireless hut in the meadow there was a sensitive direction finder for long waves up to 20,000 meters, and experimental transmitting and receiving apparatus for short waves down to 20 meters. Extensive displays of apparatus were also made by the electrotechnics and metrology departments.

### INDIAN MOUNDS IN LOUISIANA

DEFINITE addition to knowledge of the prehistoric Indian life of this continent has been made by Mr. Henry B. Collins, Jr., of the Smithsonian Institution, in the discovery of large mounds on the marshy coast of Louisiana, west and south of New Orleans. Hitherto, it had been supposed that the Attacopa Tribe of cannibals had been the only inhabitants of the western part of the area.

Mounds found by Mr. Collins, one of which rises 45 feet above the level of the surrounding country, indicate the presence of a highly developed people. Mr. Collins believes it possible that the builders of the newly discovered mounds were the ancestors of the Chitimacha Indians, a cultured people who are known to have occupied an adjoining territory.

In his excavations Mr. Collins discovered several fireplaces six feet below the surface of one mound, indicating that the mound had had two stages of development. The majority of the mounds were probably used for temple sites and the residences of priests and chiefs. Sometimes burials took place in them. Mr. Collins brought back a series of skulls of these mound builders which will be studied to determine their racial affinities. The pottery relics which he found reveal the same type of ornamentation as that common to the Gulf region eastward to Florida.

### MUSEUM OF THE PEACEFUL ARTS

DR. GEORGE F. KUNZ has announced that the projected Museum of the Peaceful Arts in New York City will soon be realized. A site on city-owned ground in upper Manhattan is under consideration by the trustees and exhibits are being collected.