be placed on a self-supporting basis. The intention is that the society should become completely independent of donations from outside bodies, so that it may be free to express opinions upon aeronautical research and engineering when necessary, and can encourage the dissemination of papers and information on all matters pertaining to aeronautical research and engineering.

AN industrial fellowship to investigate the durability of automotive tire chains has been founded at Mellon Institute of Industrial Research by the McKay Company of Pittsburgh, Pa., which manufactures commercial chains of all types. The fellowship has for its objective the production of better chains, particularly for the motorist. A comprehensive program of basic research is being carried on, including studies of the design, materials, processes of manufacture and testing of chains. Dr. David F. Helm, research engineer on cast iron metallurgy in the Engineering Experiment Station of the Ohio State University, previously chemist with the Midgley Foundation at Columbus, Ohio, is in charge of the investigation.

A WIRELESS dispatch from Paris to *The New York Times,* dated November 12, states that it is planned to proceed at once with the building of an astronomical observatory on a peak near Forqualquier, in the Basses Alpes, between Avignon and Digne. The atmosphere at that altitude, about 2,000 feet, is said to be especially favorable to astronomical observation. The best available telescopes in France will be installed at once. A contract has been signed for the construction of a two-meter telescope, which will be the second largest after the new telescope in California, and for another telescope, the dimensions and mechanical and optical features of which it is said will make it the most powerful in the world.

THE Crockett scientific expedition, sponsored by the Philadelphia Academy of Natural Sciences, sailed on December 3 aboard the two-masted schooner *Chiva* for an eighteen-month voyage among south Pacific islands. The party plans to search the islands for certain specimens of bird and animal life. It also hopes to obtain new information about the geological structure of the islands and the history and habits of the natives.

Museum News reports that plans have been drawn and work begun on the new Fleishacker Zoological Park at San Francisco, which is planned eventually to cover eighty acres. Plans now being carried out provide for the erection of the principal buildings on 40 acres, the remaining 40 acres to be developed later into barless yards and paddocks for antelope, deer and other large hoofed mammals. The largest of the buildings will be the pachyderm house, which will have stalls 30 feet square for elephants, hippopotamuses and rhinoceroses. These stalls will be connected, through sliding doors, with barless outside yards and swimming pools. A feline house for tigers, leopards, pumas, panthers, jaguars and other cats will have on one side, for tigers and lions, four large barless yards bordered with moats 12 feet deep and 20 feet wide; on the opposite side, barred cages for the species that are too agile to be safely exhibited in barless yards. A monkey island, surrounded by a 15-foot moat, will provide quarters for 100 monkeys. Five barless bear dens, now partially constructed, will have open yards surrounded by artificial rock mountains and, in front, a 15-foot moat. Each yard will have a swimming pool in the center. Other structures planned are a flight cage for aquatic birds, a house for finches and song birds, an African veldt with artificial stone walls and moated front, monkey house, reptile house, sheep and ibex mountain and lagoons for sea lions and seals.

DISCUSSION

DO BRAIN WAVES HAVE INDIVIDUALITY?

CAN an individual be identified by his brain potentials? This is an interesting and important point.

Dr. Hallowell Davis, of Harvard, stated at the last meeting of the American Medical Association that the brain potentials of a given individual were distinctive of that individual, and that individuals could be distinguished from each other by their brain potentials. However, he presented no quantitative treatment of records to substantiate this view.

To answer this question, we obtained a fair sampling of brain potentials from 44 healthy university students approximately equally divided in regard to sex. The experimental conditions were kept as constant as possible from subject to subject. The observer reclined on a bed in a dark room. He was instructed to keep his eyes closed and his mind a blank. The brain potentials were led off from the right occipital and the right motor areas. They were recorded by means of standard amplifiers and a Westinghouse oscillograph.

The following procedure was used in identification of individual records. A two-foot strip (matching sample) was cut off from the end of each record. The remainder of the record, which averaged about ten feet in length, was pasted on a wall with the cut-end turned under from 6 to 8 inches. Twenty-two such records were exhibited at one time. Four of us who

had had considerable experience in recording and evaluating brain potentials identified the records. The particular records identified were relatively new to each of us. The one to identify the record was given the matching sample and was instructed to find its mate on the wall. When he had made his decision he was not told whether he was right or wrong. Several days later, each of us repeated the task of matching. This whole process was repeated for the second half of the 44 records so that each one of us identified each record twice.

A total of 352 identifications were made (8×44). By chance, 4.5 per cent. of the records could have been correctly identified. Ninety-four per cent. of the records were correctly identified (20 errors). Seven records were missed by some one of us; one by three of us; and five by two of us. Thirty-one of the 44 records were not missed by any of us.

Some records were identified very easily and quickly. This was so because they had very distinctive characteristics. As may be judged, one or two of the records which were missed by two or three of us were very difficult to identify. This was so because two or three of the records were strikingly similar.

Every one of us became more accurate as we progressed from the first to the fourth trial. Two of us got 91 per cent. right the first time, and 100 per cent. right the fourth time. The other two got 82 per cent. right the first time and 100 per cent. right the fourth time. We are inclined to believe that this indicates learning what characteristic details are distinguishing.

Each of us listed the criteria by which we matched the records. Frequency, amplitude and form of the waves, each played its part. Under form, such characteristics as beta waves, the shape of the alpha waves and the relationship between the negative and positive deflections were noted. Also, we appeared to size up the records as a whole, evaluating such factors as trains, stability of the base line and fluctuations in frequency and amplitude of the waves. Certain other possible cues need to be mentioned. Because of differences in developing the sensitized recording paper from time to time, records differ from each other in regard to color, under- or over-development and accidental exposure to light. Some differences between records were also caused by differences in width of the time line, speed in passage of the paper and wrinkling. One is never certain that he has been able to eliminate such accessory cues, but trials made to see to what extent identification could be carried out by these alone showed them to be as confusing as helpful.

Our conclusion is that human brain potentials have individuality and that an individual can be distinguished from other individuals by his brain potentials. We don't know yet how consistent an individual's brain potentials are from day to day. This is the next question to settle.

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THE USE OF THE TERMS COENOCYTE AND SYNCYTIUM IN BIOLOGY

THE terms coenocyte and syncytium are frequently confused in biological literature. They are always used to describe multinucleate masses of protoplasm, but some writers use the words synonymously, while others have assumed a difference without making a clear distinction between the two terms. Neither do the definitions as given in Webster's New International Dictionary, second edition, 1935, help to clarify this confusion.

Since, in biology, there are two types of multinucleate masses of protoplasm with respect to ontogeny and since there are in use two terms for such structures, it seems highly desirable that the terms be differentiated and used consistently in the interest of proper comprehension and exact expression. The two ontogenetic types of such structures are: (1) an enlarged protoplast, the nuclear divisions of which have not been followed by cytoplasmic cleavage, and (2) a protoplasmic mass formed by the fusion of several protoplasts without the fusion of the individual nuclei. Examples of the former are: the filaments of Vaucheria and Rhizopus, segments of Cladophora filaments and Hydrodictyon nets, embryo sacs of seed plants, latex cells and striated muscle fibers. Examples of the second category are young xylem tracheae, latex vessels and young plasmodia of Myxomycetes.

The term coenocyte should be used in connection with the first type of structure described above, and syncytium with the second. This distinction was clearly brought out in S. H. Vines's "Textbook of Botany," 1895, pp. 90–91. In response to a letter of inquiry sent recently to the editors of Webster's New International Dictionary, the same interpretation was held: ". . . the multinucleate structures that are called *coenocytes* arise . . . by enlargement, along with nuclear divisions, of single protoplasts, while the multinucleate structures that are called *syncytia* arise by the uniting of separate protoplasts."

About the only distinction one can find in modern biological literature is that zoologists as a rule use only the term syncytium, while botanists tend to use coenocyte nearly to the exclusion of the other term!

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THE BLACK WIDOW SPIDER IN VIRGINIA

IN his note entitled "New Localities for the Black Widow Spider" in SCIENCE for November 13, 1936, Lowrie makes the statement that this spider has not