

Brain wave period and auditory reaction time in different age groups have been examined in 137 subjects with an age range of 23.1 to 87.1 years. Only normal EEGs have been utilized. Brain pathology was present in 65 and not demonstrable in 72. The brain wave period increased at a rate of 0.49 msec per year of advancing age in the 137 subjects. There was no statistically significant difference in this regard in the subgroups. Auditory reaction time showed an increase of 24 msec in each successive decade. The decisive factor in regard to lengthening of brain wave period and increase of auditory reaction time appeared to be associated with some process of aging.

4. The effects of some psychosomimetic agents on visually evoked responses and background EEG. — E. A. Rodin and E. D. Luby (Detroit, Mich.).

The effects of LSD 25 and Sernyl on the visually evoked response were compared in 5 adult male subjects. Each subject received both drugs with a minimum of 10 days interval between tests. The pupils were dilated prior to drug administration in each instance. LSD was given in a dosage of 1 μ g/kg and Sernyl in a dose of 0.1 mg/kg. The route of administration was i.v. drip. EEG observations were arbitrarily terminated 20 min after the end of the infusion. The photic responses were averaged by means of a Mnemotron CAT; changes in the background EEG were determined through a Faraday 2-channel frequency analyser. It was observed that the major components of the visually evoked potential showed a decrease in amplitude and shortening of latency as a result of LSD administration. There was also a decrease in energy output in all frequency bands of the resting EEG except for fast frequencies between 24 and 33 c/sec. These remained unchanged in 3 subjects and showed an increase in 2 others.

The Sernyl results showed greater individual variations but in general there was also a tendency towards decrease in amplitude of the visually evoked response. The resting EEG showed a decrease in the energy amount occurring in the delta, alpha, intermediate fast and fast bands, but an increase in the energy amount of the theta frequency band.

Another marked difference in the action of the two drugs was demonstrated by the observation that the maximum effect of Sernyl was seen as soon as the infusion was finished but the maximum of the LSD effect was noted at the time of termination of the test. This suggests that the psychosomimetic action of LSD is not a direct result of the drug itself, but due to some secondary metabolic process which is initiated by the compound.

5. A precision method for the measurement of contemporaneous discharge potentials. — R. Cohn (Bethesda, Md.).

Contemporary cortical discharge signals were delivered into matched amplifiers. The outputs of these amplifiers were introduced into pulse generators which were activated by identical critical (but arbitrary) rise-times. The resultant pulses were displayed on a cathode-ray oscilloscope screen and recorded by rapidly moving photographic film with sufficient transit-time to achieve a 1 msec resolution. For convenience of handling, the potentials were

first recorded on magnetic tape and then replayed under optimal conditions.

Using the above method a study of the appearance times of contemporary spikes of the spike-dome complex was made of 5 relatively long sequences in 2 individuals. All recordings were made from homologous frontal derivations.

Precision measurements demonstrated that in every instance there was a preponderance of leading on one side. This preponderance ranged from approximately 60 to 100%. The range of separation (or asynchrony) of initial spikes was from zero (within 1 msec) to 35 msec. The mean separation of spikes was in the range of 8–20 msec in the several discharges. These precision data were subjected to statistical treatment. The presented measurements confirmed the author's earlier estimated lack of synchrony of the spike discharges of the classical spike-dome complexes.

6. EEG changes following spasm of basilar and vertebral arteries produced by experimental subarachnoid hemorrhage. — F. Echlin (New York, N.Y.).

In 25 monkeys the basilar and vertebral arteries were exposed through a basilar craniectomy. Severe spasm of these arteries, commonly resulting in cessation of respiration, marked EEG changes (pronounced flattening, suppression burst and slow wave activity) and, at times, death was produced: (1) when arterial blood was merely irrigated onto the vessels after opening the arachnoid; (2) when subarachnoid bleeding was produced by needle rupture of a tiny pial vessel; (3) when subarachnoid hemorrhage occurred after a blow to the animal's head, and (4) following application to one of the arteries of either 2 drops of blood, or a 1 mm pledget of cottonoid soaked in blood. Serotonin 1:1000 or blood serum caused lesser and more variable spasm than did blood.

It is concluded that fresh blood contains vasoconstrictor substances or properties capable of causing marked spasm of the vessels at the base of the brain. Further re-evaluation of our thinking in relation to the clinical significance of subarachnoid hemorrhage is necessary: such hemorrhage and the vasospasm it may precipitate could explain, in part, the prolonged coma and death, as well as certain other neurologic and EEG findings that may follow a ruptured aneurysm or trauma to the head.

7. The effect of intracarotid Sodium Amytal injections upon penicillin-induced epileptogenic foci in the monkey. — F. Coceani, I. Libman and P. Gloor (Montreal, Que., Canada).

Intracarotid injection of Sodium Amytal has been used as a diagnostic method in the differentiation between secondary bilaterally synchronous discharges triggered by a cortical focus and the primary bilaterally synchronous discharges of centrencephalic epilepsy. The basis for the interpretation of the test is the assumption that epileptiform discharges are only depressed when the drug reaches the epileptogenic area.

The present experimental series in monkeys was undertaken in order to test the validity of this assumption in a situation in which the location of the foci was precisely known.