from 1 min. 30 sec. to 1 min. 40 sec. Frontal craniotomy was performed and a wire hook was hung at the common genu of the anterior cerebral arteries, on the 10th day after operation, the wire hook was tugged briskly to give the N.V.F. She became mild and lost her aggressive character. She therefore abdicated from the position of the gang-leader and became indifferent towards other monkeys or towards affairs that happened around her; she isolated herself from the group most of the time. Maximal delayed-response time decreased markedly. She was often seen to hang her head down with a hand over her forehead as if in pain. The neurotic condition exhibited by this monkey resembles Type 1 in our classification of posttraumatic neurosis. Case 2. A female adult Japanese Monkey. In a normal monkey, the daily cycle of blood pressure, the pulse frequency and respiration are said to be monophasic. In this monkey, respiration, pulse frequency & body temperature cycles were also monophasic and all values were maximal from noon to two in the afternoon and minimal between two to four in the morning. Craniotomy was performed and a wire hook was hung at the origin of the right anterior cerebral artery. On the 10th day after operation, traction of the vessel was done. It followed clouding of consciousness for 7 minutes, and then caused tachypnoe and tachycardia for 2 hours. Thereafter the daily cycle became polyphasic indicating destruction of control of the autonomic nervous system. As in case 1, she also assumed interesting postures, as if she had a headache. Disorders developed in this monkey resembled those of Type V of our classification of post-traumatic neurosis in man.

As already mentioned, we were able to demonstrate the sequels of head injury ranging from cerebral concussion to posttraumatic neurosis in animals by traction on the cerebral arteries. Thus we conclude that the mechanism of neuro-vascular friction plays a great part in the development of symptoms in closed head injury.

113. Study of the Head Injury Caused by Parachute-jump.

—The 3rd Report on Animal Experiment—

H. HORINOUCI, K. TANIMURA and S. HOSODA

Neurosurg Sec. Defence Forces Central Hospital

We reported the peculiar head injury resulting from Parachute-jump at the 17th and 18th Meetings of Japan Neurosurgical Society. As factors responsible for these injuries are two, one being Parachute-opening-shock and the another being landing-shock, a series of animal experiments on these factors was carried out. White rats weighing 3 gm were employed. These animal were divided into two groups-acceleration (about 5 G or 6 G) group (Parachute-opening shock)

and local-weight group (landing-shock).

These animals were then subjected to histological, biochemical examinations and labyrinth-test. The results of our study supported our view that head injury are produced by two factors, Parachute-opening-shock and landing-shock. There is a definite difference between the aforementioned two factors both in the development mechanism and histological findings. Namely, Parachute-opening-shock mainly causes the acceleration(G) and its histological findings include central bleeding. Landing-shock is due to the local action of weight and produces peripheral bleeding histologically.

Furthermore, we are repeating this experiment in larger animals (dogs) and studying also electro-physiologically.

174. The Use of Megimide as an Activator in Electroencephalography on Posttraumatic Sequelae Patients of Head Injury.

T. SHIMIZU

Yamaguchi Rosai Hospital

The use of Megimide as an activator in EEG was performed on 65 cases and its effects were studied.

Abnormal EEG changes were evoked in 26.1% of those patients, and in 78.5% of epileptic patients. The more brain damage or abnormal finding of pneumoencephalography was severe, the more its effect was found.

Megimide is more gentle in its action than pentazol, so more diagnostic advantage was observed by its activation on posttraumatic sequelae patients of headinjury.