

DISCUSSION

SKIN TEMPERATURE REACTIONS FOLLOWING REMOVAL OF THE LEFT CEREBRAL HEMISPHERE

A RECENT report by Kennard¹ discusses the alterations in skin temperatures following certain lesions in the premotor area of the cerebral cortex. She concluded from observations on subhuman primates, as well as in a case of tumor of the brain, that the premotor area of the cerebral cortex directly influences the autonomic system and in particular the vasomotor mechanism. She noted alterations in skin temperature on the contralateral side of the body as well as alterations in color and texture of the skin.

Following unilateral extirpation of certain portions of the frontal lobe in animals, she found that abrupt cooling gave rise to vasoconstriction, which occurred as in normal animals equally and simultaneously in both feet. Heating gave a vasodilatation which occurred very slowly in the foot opposite to the side of the lesion, whereas the response on the ipsilateral foot was prompt and normal in character.

The following observations on skin temperature reactions were made on a patient following the removal of the entire hemisphere except the basal ganglia. A total of 760 grams of cerebral tissue, including tumor, was removed. At the suggestion of Dr. J. F. Fulton observations were made of the skin temperature reactions of the legs to determine the effect of removal of the hemisphere on the vasomotor response. On the seventh day after left hemispherectomy the patient was placed in a draught-free room with temperature 74° F. and humidity 58 per cent. Skin temperature readings were made on both lower extremities, using the Tyco's Dermatherm.² The temperatures of both great toes, after exposing the extremities to the room air, were 32.5° C. T. equal on both sides. The same was true of similar corresponding points. There were no evidences of abnormal redness, heat or sweating on the contralateral side.

The forearms of the patient were then placed in hot water at 43° C. and skin temperatures taken on the lower extremities at one-minute intervals over a period of one-half hour (technique of Gibbon and Landis³). There was the usual sudden temperature

drop averaging 1° C., following the sudden stimulus of placing the forearms into the hot water.⁴ The temperature then began to rise in the normal way and reached 35.6° C. on the right and 35.4° C. on the left side (3° rise). Redness and skin texture were equal on both sides, but no sweating was demonstrable. The body temperature rose from 101.6° to 102.2° F. (rectal).

Seven days later, the patient was placed in the same room at 76° F. and 56 per cent. humidity. Initial skin temperatures of the great toe were 31.5° C. on the right and 31.3° C. on the left side. The forearms were then immersed into cold water at 16° C. and temperatures taken at one-minute intervals for thirty minutes. Immediately following immersion of the forearms into cold water there was a generalized vasoconstriction with a fall in temperature of 0.9° C. on both sides. The temperature began rising slowly and reached its maximum of 32.1° C. on the right and 31.7° C. on the left side in seventeen minutes; an average rise of 1.5° C. above the coolest temperature after immersion into cold water. There was a similar rise in body temperature from 101.2° to 101.6° F. (rectal).

These determinations show that in hemispherectomy in the human there appear to be no measurable alterations in peripheral temperature regulation on either the ipsilateral or contralateral side. There were no alterations in either the texture or color of the skin of one side as compared to the other. The variability of corresponding temperatures on either side were within normal limits of fluctuation, based on the studies of many controls.^{3,5} The elevations of temperature following immersion into the hot and cold water were normal and designate a normal vasomotor apparatus.

ROBERT ZOLLINGER
MAX T. SCHNITKER

PETER BENT BRIGHAM HOSPITAL
BOSTON, MASSACHUSETTS

INSECT TRANSMISSION EXPERIMENTS WITH HERPES-ENCEPHALITIS VIRUS

IN the September 15, 1933, issue of SCIENCE we published a progress note entitled, "Insect Transmission Experiments with Herpes-Encephalitis Virus," in which we summarized the results obtained in our attempts to transmit three strains of virus through *Aedes aegypti*. The evidence then appeared to war-

⁴ G. W. Pickering, and W. Hess, "Vasodilatation in the Hands and Feet in Response to Warming the Body," *Clin. Science (Incorporating Heart)*, 1: 213-223, 1933.

⁵ E. C. Cutler and Max T. Schnitker, "Skin Temperature Changes after Total Thyroidectomy," *Jour. Exper. Biol. and Med.*, 31: 736-739, 1934.

¹ Margaret A. Kennard, "Vasomotor Representation in the Cerebral Cortex," *SCIENCE*, 79: 348-349, 1934.

² John J. Morton, and W. J. Merle Scott, "Methods for Estimating Degree of Sympathetic Vasoconstriction in Peripheral Vascular Diseases," *New Eng. Jour. Med.*, 204: 955-962, 1931.

³ J. H. Gibbon, Jr., and E. M. Landis, "Vasodilatation in Lower Extremities in Response to Immersing Forearms in Warm Water," *Jour. Clin. Investigation*, 11: 1019-1036, 1932.