DISCUSSION

SKIN TEMPERATURE REACTIONS FOLLOWING REMOVAL OF THE LEFT CEREBRAL HEMISPHERE

A RECENT report by Kennard[1] 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 Tycos 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 Landis[3]). 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.

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[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.

[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.

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 warrant the following conclusion: "In view of the incidence of death and paralysis among the experimental animals and particularly because of the nine rabbits and one monkey which showed the histological lesions of encephalitis after being bitten by the mosquitoes, we feel that the work already done strongly indicates that the viruses used have been transmitted by *A. aegypti,* but that further investigation is required to furnish absolute proof."

In spite of the incomplete nature of the work at that time it was decided to publish the results in the hope that they might possibly throw some light on the source of the St. Louis epidemic of encephalitis, which was then at its height.

The experiments mentioned have been continued until the present, and while we still feel that some infectious agent may have been transmitted, we have not been able to obtain more definite evidence of the transmission of the herpetic viruses or to add anything that would confirm the conclusion drawn from the earlier experiments.

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AN ENCYCLOPEDIA OF CHEMICAL REACTIONS

FOR more than five years, with the help of numerous graduate students, the author has been compiling data on the chemical properties of various elements and compounds, expressing the reactions by means of formula equations.

This work was started because of the lack of facilities for quickly locating reaction data. Hours and even days are consumed in searching the literature concerning information about some suspected reaction, and yet, when the search is completed, the probability is that authentic data upon this very reaction, published somewhere, have not been encountered.

The aim with this encyclopedia is to make it complete, so that it will include all accredited chemical literature in every language covering the inorganic field as well as a portion of the organic. However, the record for each reaction included in the encyclopedia is limited to the following concise entry: First, giving the symbol or formula of the reacting substance, alphabetically arranged. Second, in a marginal space to the left, is printed the symbol or formula of the reagent with which the substance undergoes a chemical change. Third, a brief statement of the conditions governing the reaction is included, which also names the products reacting and the products formed. Fourth, a balanced equation follows, expressing by symbols and formulas the complete reaction which may occur in one or more steps. Fifth, the name of the person or persons who made the original contributions upon this reaction, where and when these records were published, together with reference to some accessible abstract of the original.

The entire record for each reaction is placed upon a card 10 × 14 centimeters and sent to the central office for classification. All records are stored in card index files until a complete digest of all journals has been received, whereupon the problem of publication will arise.

The following entries show the plan of the completed work:

ALUMINUM

No. 74 c̄ $Ba(OH)_2$ (c̄ means with)	*Al* Barium aluminate is formed when a hot solution of barium hydroxide reacts with aluminum. $2Al + Ba(OH)_2 + 7H_2O = Ba(AlO_2)_2 \cdot 5H_2O + 3H_2$ Allen & Rogers. Am. Chem. Jour. *24,* 304 (1900)
78 c̄ Fe	*Al* Iron-gray, dense, lance-shaped crystals are obtained when one part of iron and three parts of aluminum are melted together and crystallized from 2% hydrochloric acid. $3Al + Fe = FeAl_3$ Brunck. Ber. *34,* 2733 (1901)
580 c̄ Na_3AsO_4	$Al_2(SO_4)_3$ Aluminum arsenate is formed when aluminum sulfate reacts with sodium arsenate at 200° C. $Al_2(SO_4)_3 + 2Na_3AsO_4 = 2AlAsO_4 + (3Na_2SO_4)$ Coloriano. Compt. rend. *103,* 273 Ber. *19,* 660 (abs.) 1886.

CARBON

59 c̄ H_2	*C* Dry hydrogen passed over pure carbon mixed with 4% by weight of platinum sponge at a temperature of 1150°, the gas flowing at the rate of 1000 to 1100 cc per hour, produces methane. $C + 2H_2 = CH_4$ W. A. Bone & H. F. Coward, J. Chem. Soc. *97I,* 1219 (1910)
400 c̄ $I_2 + K_2S$	*KCN* A weak solution of iodine reacts with a mixture of potassium cyanide and potassium sulfide to give potassium thiocyanate. $KCN + I_2 + K_2S = KCNS + (2KI)$ W. I. Sharwood, J. Am. Chem. Soc. *19,* 430 (1897)

A more complete discussion of this project was published in the October, 1933, *Journal of Chemical*