

strate that the metabolic stimulating effects of dihalophenols and trihalophenols, which are relatively insignificant in the higher temperature ranges, are more readily recognized at lower temperatures. These experiments are also of interest in connection with the elucidation of the mechanism of oxidation stimulation. This subject will be more fully discussed at a later date.

8704 P

Further Observations on the Function of Supernumerary Fingers in Man.*

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In a previous communication by one of the authors,¹ the results of a study of finger movements in a reduplicated human hand, originally described by Halverson and Amatruda,² were reported. The supernumerary fingers 3, 4 and 5 exhibited a decided tendency to be moved each one in association with the corresponding normal finger. Recently, after an interval of 8 months, at the beginning of which the patient had been instructed as to how to attempt to acquire the independent use of homologous fingers, the case was reexamined.

Kymographic records by means of torsion wire levers were taken simultaneously from 4 fingers, the normal 3rd and 4th and the supernumerary 3rd and 4th, the lower arm being fixed in pronation or supination. In spite of the marked tendency of all fingers except the unpaired index to move en masse, it was noticeable that during random movements, as well as in attempts to counteract the passive extension or flexion of a given finger, homologous fingers would contract in unison, much in the way described in the former communication. It was equally clear, however, that *independent* movements of each finger of a homologous pair could also be obtained, provided the girl was brought to focus her attention on the task of dissociating. Then, normal 3rd and supernumerary 3rd

* Aided by the Biological Research Grant to the University of Chicago from the Rockefeller Foundation.

¹ Weiss, Paul, *PROC. SOC. EXP. BIOL. AND MED.*, 1935, **33**, 426.

² Halverson, H. M., and Amatruda, C. S., *J. Gen. Psychol.*, 1935, **13**, 140.

Similar case described by Dwight, T., *Anat. Anz.*, 1893, **8**, 60.

could be moved alternately, as well as could normal 4th and supernumerary 4th. Visual control or touching of the finger to be moved independently greatly facilitated the dissociability. Fatigue, on the other hand, seemed to reduce it. The girl, according to her own statement, had always to spend a certain amount of effort on keeping homologous fingers from working in association.

On the whole, the conclusion seems to be warranted that cortical activity, as expressed by conscious effort and focussed attention, can momentarily abolish the association between homologous muscles existing on lower levels of central activity. It is obvious that the primary condition is the association while the dissociability is the result of secondary acute intervention of the cortex. Animals lacking a cerebral cortex such as the amphibia may therefore not be expected to show phenomena of secondary dissociation, and as a matter of fact have never thus far displayed any.⁸

8705 P

Mechanism of Increased Capillary Permeability in Inflammation.*

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When various types of inflammatory exudates obtained from dogs or rabbits are introduced into the normal skin of either of these animals an immediate vasodilatation and increased capillary permeability follow. This is demonstrated by the diffuse accumulation of a dye (trypan blue) from the circulating blood into areas treated in this way.^{1, 2, 3} This finding suggests that an active substance increasing capillary permeability is present in exudates. The effective agent may be recovered by treating the exudates with saturated ammonium sulphate or 20% sodium sulphate. It is thermostable and is active at pH 7.4 to 6.5. Dialysis of the

³ Weiss, Paul, *Ergebn. d. Biol.*, 1928, **3**, 1; *Proc. Soc. Exp. Biol. and Med.*, 1935, **33**, 241.

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¹ Menkin, V., *J. Exp. Med.*, 1929, **50**, 171.

² Menkin, V., and Menkin, M. F., *J. Exp. Med.*, 1930, **51**, 285.

³ Menkin, V., *Am. J. Med. Sci.*, 1935, **190**, 583.