New York Meeting

New York Academy of Medicine, March 18, 1936.

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General and Cerebral Anaphylaxis in the Monkey.

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Monkeys have rarely been used in anaphylactic experimentation because they were found to be refractory. Zinsser[1] concluded that "anaphylaxis is very difficult to obtain in the lower monkeys, probably cannot be obtained by a single preparatory injection, but that occasionally definite mild anaphylactic reactions can be obtained in these animals." In continuing our studies on local cerebral anaphylaxis[2] we proceeded in the *Macacus rhesus* as in the dog, namely, with intravenous injections following repeated or continuous antigen contact in the brain. Four out of 7 monkeys (Nos. 3, 5, 8, and 9) responded with slight contralateral loss of tone in the hind leg following intravenous injections of the appropriate antigen.

One animal (14) however, which had been previously sensitized with egg-white intramuscularly and intravenously and subsequently injected directly into the left motor area of the brain with the same antigen responded 2 days later with striking convulsive twitchings of the right arm and right side of the face. The right motor area of the brain had received horse serum as a control but it failed to cause any reaction.

Another series of monkeys were given repeated intravenous injections of antigen. In these fatal anaphylaxis occurred.

Table 1 shows that 11 of the 12 monkeys died of acute anaphylactic shock. (The exception was a monkey which was given a concomitant intravenous injection of 1 cc. adrenalin—marked gen-

[1] Zinsser, H., PROC. SOC. EXP. BIOL. AND MED., 1920, **18**, 57.

[2] Davidoff, L. M., and Kopeloff, N., PROC. SOC. EXP. BIOL. AND MED., 1931, **29**, 71; 1934, **31**, 980; *J. Lab. Clin. Med.*, 1935, **20**, 1238.

TABLE I.
Results of Injections of Egg-White in Monkeys.

No.	Preliminary Treatment	Subsequent No. Injections E.W. i.c.	Subsequent No. Injections E.W. i.v.	Final Reaction
3	Agar c E.W. i.c.	0	4	Collapse*
4	" " " "	4	1	Death
5	" " " "	5	2	"
6	" " " "	3	2	"
7	E.W. i.c.	2	3	"
8	" "	2	2	"
9	" "	2	2	"
11	" "	0	2	"
16	E.W. i.v.	0	2	"
24	" "	0	3	"
13	E.W. i.m.	0	2	"
15	E.W. i.v.	1	1	"

*1 cc. adrenalin injected concomitantly.
i.c.—intracerebral.
i.v.—intravenous.
i.m.—intramuscular.

eral weakness resulting, nevertheless). The order of injections, elapsed time, etc. have been omitted for the sake of brevity but will be included in a more extended report.

From the data summarized in Table 1 it appears that monkeys may be rendered anaphylactic by the administration of an antigen (egg-white) in at least 2 doses given at suitable intervals, so that a final shocking dose produces death regularly. In 3 others death followed a *single* preparatory dose.

In 4 monkeys (Nos. 4, 5, 6, and 15) previously given at least 2 injections of antigen (egg-white) a series of intracerebral injections of the same antigen into the motor areas at 2-day intervals produced marked local swelling at the site of injection and in 2 instances, death. At necropsy, definite aseptic necrosis of the brain was found in the area of injection.

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Toe Lesions Following Tobacco Injections in Rats.

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During the past 5 years we have attempted to produce gangrenous lesions of the extremities in rabbits and cats by the injections of tobacco or nicotine. We hoped in this way to study the possible