

TABLE I.
Failure of a Polysaccharide from *Ascaris suum* to Inhibit Anti-Rh, Anti-M, Anti-N, and Cold Agglutinins.

Test materials			Positive agglutination with erythrocytes	
No. and source of serum samples	Agglutinins	Erythrocytes tested	Untreated serums	Serums treated with 4% polysaccharide
3 { 2 human 1 guinea	Anti-Rh	Group O Rh+ Group O Rh-	Rh+	Rh+
1 commercial	Anti-M	M and N	M	M
1 "	Anti-N	M and N	N	N
5 human	Cold agglutinins	Patient's cells	Patient's cells	Patient's cells
5 rabbit	Cold agglutinins, no agglutinins at 37°C	Group A and rabbit's own cells	Group A and rabbit's own cells	Group A and rabbit's own cells

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Poliomyelitis Virus in the Human Oro-pharynx.*

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In an effort to explain the transmission of poliomyelitis recent investigations have tended to emphasize the finding of virus in the feces. While successful attempts to demonstrate virus in the human nose and throat were made in earlier years these have virtually been abandoned in the face of readily isolated intestinal virus.¹ It is possible, however, that the technical difficulties of virus isolation have played an important role in emphasizing the apparent rarity of virus in the pharynx. The current communication deals with an attempt to vary the methods which have been employed in the past. Instead of the nasal or pharyngeal washing we have employed cotton swabs rubbed against the posterior wall of the oro-pharynx and the peritonsillar area. The swabs were then detached, dropped into a fluid-tight container with 1 cc of sterile water, and stored on dry

ice. An average of 2 swabs was obtained from each subject.

The subjects were patients in the New Haven Hospital admitted during the late summer of 1943. Twenty different specimens were obtained at various times during the first week of the acute illness.[‡] Patients were paralytic or non-paralytic. While it has been impossible to test the entire series of swabs, 14 specimens have been examined to date and it is felt that the results are of sufficient interest to merit a preliminary report at this time.

The technique of inoculation was as follows. It had previously been shown that elution from cotton or mouse cord emulsion containing Lansing virus was most complete at pH 8. On the other hand, mouse inoculation was more successful with the eluate ad-

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[‡] We wish to thank Dr. Robert Ward for valuable assistance in collecting some of this material.

¹ Vignee, A. J., Paul, J. R., and Trask, J. D., *Yale J. Biol. and Med.*, 1938-39, **11**, 15.

TABLE I.
Poliomyelitis Virus in Throat Swabs.

Patient	Sex	Age	Type	Day of disease	Exp. result
Houde	♀	6	Non-paralytic	1	+
Johnson	♂	15	"	2	+
Broccoly	♀	11	"	2	+
Gronin	♂	10	"	1	—
Doer	♂	—	"	1	—
Gajewski	♀	12	"	2	—
Stowe	♂	11	Paralytic	2	+
Mari	♂	10	"	2	+
Stone	♀	6.5	"	2-3	—
Noa	♂	8	"	1	—
Shuman	♂	15	Bulbar	6	—
Morgan	♂	15	"	2	+
Lanette	♀	13	"	4-5	—
Hill	♂	13	Fatal Bulbar	1	+

justed at pH 6.² The throat swabs were accordingly eluted in phosphate buffer at pH 8, the fluid being pressed out of the cotton in a syringe. The eluate was then brought to pH 6 and treated with 20% ether in the ice box until sterile (usually 36 hours) at which time the ether was removed. In no case was more than 1.1 cc of inoculum obtained, which made it possible to give the entire specimen by intracerebral inoculation to a single monkey. Rhesus monkeys of 8-10 lb. were used. Under ether anaesthesia a trephine hole was made over the sagittal suture just posterior to the coronal sutures. It was thus possible through this single opening to place half of each inoculum into each lateral thalamus. This region was chosen because of its

relatively high susceptibility and its deep position, which minimized regurgitation of the inoculum.

The 14 specimens tested were unselected from the larger series and are listed in Table I. Of this group, 7 (50%) produced typical poliomyelitis in the test rhesus monkeys. Six of the 7 animals were paralytic. Microscopic sections have shown characteristic lesions in each case and although virus studies have not been completed there seems little doubt regarding the nature of the infectious agent. The positive findings were equally distributed between paralytic and non-paralytic human cases.

Summary. Throat swabs were taken from 14 cases of human poliomyelitis during the first week of the disease. Seven of these (50%) were found to contain active virus.

² Wenner, H. A., unpublished.

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N. dibutyl Succinate as a Solvent for Parenteral Injection.

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Recently we have had occasion to test the toxicity of some water insoluble drugs. Lipschitz *et al.*¹ after extensive studies with vari-

¹ Lipschitz, W. L., Upham, S. D., Hotchkiss, C. N., and Carlson, G. H., *J. Pharm. and Exp. Therap.*, 1942, **76**, 189.

ous organic esters stated that N. dibutyl succinate showed a minimal toxicity when injected intramuscularly into rats and believed the agent suitable as a solvent for parenteral injections. This agent was selected for the solvent of our drug and was injected intra-