particular case. In another experiment, spinal fluid incubated with the drug in dilutions up to 1:1,000 (0.8 mg. %) for 24 hours failed to show growth; the same specimen incubated with sulfanilamide in a dilution of 1:10,000 (0.08 mg. %) showed some growth of meningococci while the control tube of spinal fluid mixed with saline solution grew out profusely. Similar experiments revealed that large numbers of meningococci present in incubated spinal fluid, when treated with sulfanilamide, may fail to grow or may grow less profusely than in spinal fluid mixed with physiological saline solution. Notwithstanding this result, no conclusion should be drawn concerning a true bactericidal action of sulfanilamide upon the meningococcus present in spinal fluids.

In summary, sulfanilamide exerts a bacteriostatic effect upon the meningococcus present in spinal fluid obtained from patients with meningococcal meningitis. Clinical observations may show whether this kind of experiment can give an indication of the effectiveness of this drug in the treatment of meningococcal meningitis.

9731 P

Experimental Street Virus Rabies in White Mice. Studies on Passive Immunization. II.*

ANSON HOYT AND M. KATHERINE GURLEY.

From the Department of Bacteriology, School of Medicine, University of Southern California, and the Los Angeles County Hospital, Los Angeles.

In a recent publication[1] from our department it was reported that white mice could be afforded a certain degree of passive protection against intracerebral inoculations of rabies street virus if large amounts of antirabic serum were injected intraäbdominally before the administration of virus. One experiment indicated that rabbit antirabic serum gave better protection than had previously been demonstrated for goat antiserum. The present report covers further evidence of the value of rabbit antirabic serum.

Rabbits were immunized by weekly intramuscular injections of 5 cc. of a 5% fixed virus suspension in saline solution. Phenolized virus (½% phenol) was used for the first few injections; fresh

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[1] Hoyt, Anson, and Gurley, M. Katherine, PROC. SOC. EXP. BIOL. AND MED., 1937, **37**, 454.

virus was employed thereafter and immunization continued for at least 10 weeks. The serums of several rabbits were pooled, filtered and inactivated before use.

Table I shows the protective value of rabbit antirabic serum when injected before intracerebral inoculations of street virus; three experiments are summarized. Two strains of street virus were employed, one from a dog, the other consisting of brain tissue from a human case of rabies. The virus was ground to a 1 to 10 suspension in saline solution and centrifuged; the supernatant fluid was inoculated intracerebrally in doses approximating 0.02 cc.

TABLE I.
Antirabic Serum Injected Intraabdominally Before Intracerebral Inoculation of Street Virus.

Source of Virus	Exp. No.	No. of Mice	Amt. Serum, cc.	Mice Contracting Rabies: Survivals	Mice Contracting Rabies:	% of Survivals
Dog Brain	I	26	2	26	0	100
" "	II	14	2	13	1	93
" "	II	15	1	13	2	87
Human Brain	III	21	1	21	0	100
Dog Brain	II	15	½	9	6	60
" "	II	14	¼	7	7	50
" "	II	14	1/10	6	8	43
Controls	I	27	None	0	27	0
	II	26	"	0	26	0
	III	31	"	3	28	10

Exp. I. Discarded on 22nd day. Mean incubation period of controls 11.0 days.
Exp. II. " " 31st " " " " " " 11.9 "
Exp. III. " " 31st " " " " " " 15.3 "

The protective power of rabbit antirabic serum was further assayed in one experiment by the injection of the serum at varying intervals following the intracerebral introduction of virus. Human street virus, in doses already indicated, was employed and serum was administered intraäbdominally in 1 cc. amounts. All mice were observed for 31 days. Table II summarizes the results of this experiment.

TABLE II.
Injection of Serum at Varying Intervals Following Intracerebral Introduction of Virus.

Serum Given	Total Mice	Mice Contracting Rabies: Survivals	Mice Contracting Rabies:	% of Survivals	Mean Incubation Period of Mice Contracting Rabies (Days)
1 day before virus	21	21	0	100	—
2 hrs. after virus	19	19	0	100	—
1 day " "	18	16	2	89	25.3
2 days " "	21	19	2	90	26.0
4 " " "	20	11	9	55	23.6
Controls, no serum	31	3	28	10	15.3

Under the experimental conditions employed rabbit antirabic serum injected intraperitoneally into mice showed a marked protective power against intracerebral inoculation of rabies street virus even when serum was administered as late as 4 days after virus.

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A Pannus-forming Infection of Sheep Eyes.

LORAND V. JOHNSON. (Introduced by Torald Sollmann.)

From the Laboratory of Surgical Research, Division of Ophthalmology, Western Reserve University School of Medicine, and the University Hospitals, Cleveland, Ohio.

This preliminary report is concerned with the description of a disease of the conjunctiva and cornea of sheep, of natural occurrence, which results in the formation of a pannus, not unlike that in human trachoma.

The farmer from whom I obtained my diseased sheep first noticed the non-purulent infection of the conjunctiva and nictitating membrane, evidenced by congestion, edema, epiphora, as fall weather and near-freezing temperatures prevailed. Examination by him of the large flock allowed about 200 infected animals to be isolated, 10% of which had marked vascularization of the cornea. Two weeks later, when I was asked to examine the flock, less than 1% were not infected. Probably 80% suffered clinical pannus formation, and 5% superficial ulcers at the tip of the pannus. Hypopyon ulcer was seen in only those that were so blinded as to be unable to prevent injury to the cornea in trying to graze and follow the flock. No perforation of the cornea was seen. A representative animal, moderately infected, was removed to the laboratory for research purposes.

Animals in the locality had, during the summer, been infected with equine encephalitis, gangrenous stomatitis (calf diphtheria, necrobacillus, or actinomyses necrophous-Bergey's classification) and contagious ecthyma. Adjoining farms enjoying identically good pasture and climatic conditions, suffered the above 3 infections, but none had sheep with infected eyes. An Indian boy who had attended the sheep during lambing was examined, but showed no evidence of clinical trachoma.

A number of organisms have been cultivated from conjunctival