

raspy, non-productive cough. It was killed with sodium cyanide and necropsy revealed nothing abnormal in any organs except the lungs, where long reddish yellow membranous strands of fibrinous material protruded from and partially plugged the main bronchi and some smaller bronchioles. Otherwise the lungs appeared normal and there was no evidence of sulfanilamide powder in the lungs or trachea.

Experiment 4. Dog weight, 18.4 kg, less than 17 g sulfanilamide powder inhaled. Initial blood level of 7.7 mg/100 cc at 4:40 p.m. on 12-18-42, 6 minutes after cessation of 50 minutes of inhalation. The animal had a harsh cough with practically no sputum during the first few days after inhalation. The dog was groggy on December 19 but was apparently normal the next day. The urine sulfanilamide level at noon the day after the inhalation was 1660 mg/100 cc. Large feathery crystals were seen in the test tube of urine. Recovery.

Experiment 5. Dog weight, 12.6 kg, less

than 7 g sulfanilamide powder inhaled. Initial blood level of 7.1 mg/100 cc at 3:50 p.m. on 12-21-42, 3 minutes after cessation of 54 minutes of inhalation. The animal was killed with sodium cyanide 6 hours after the inhalation. Necropsy revealed nothing unusual in the kidneys, liver, heart, spleen, adrenals, or other organs except the trachea and bronchi. In the trachea and larger bronchi there were probably several grams of mucoid coated sulfanilamide while the smaller bronchioles showed only a small fleck of this material.

Summary and conclusions. The intra-tracheal insufflation of sulfanilamide powder in dogs will produce high blood levels of the drug (up to 33.2 mg/100 cc) associated with high urinary levels (up to 1660 mg/100 cc) and accompanied by general symptoms of depression and intoxication. A local accumulation of the powder persists during at least the first 6 hours and is followed by cough and signs of irritation of the lining of the trachea and bronchi which may last for several days.

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Attempts to Acclimate Poliomyelitis Virus to Tomato Plants.*

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It is now generally believed that the gastrointestinal tract of the human from the stomadeum to the hind gut is probably the main portal of entry of poliomyelitis virus.^{1,2,3}

Because the gastrointestinal tract has been implicated, it has been thought by us that the virus might be found on and ingested with food. The common edible plants present no ostensible signs of infection, but it is possible that they may become infected with-

out external or internal evidence of disease. We were not able, however, to demonstrate the presence of poliomyelitis virus in or on fruits, etc.,⁴ although our failure to find it does not mean that it was absent. It was decided to see if poliomyelitis virus could be acclimated to some common plant.

The tomato was chosen for this work. Forty-eight tomato plants were planted in the university greenhouse and allowed to grow to an age where 4 separate shoots had appeared along the main stalk. They were then divided into sets of 6 and tested with one of the following materials: (a) "enteric"

* Sponsored by the National Foundation for Infantile Paralysis, Inc.

¹ Toomey, John A., *J. Ped.*, 1941, **19**, 103.

² Toomey, John A., *Ann. Int. Med.*, 1935, **8**, 7.

³ Toomey, John A., *J. Ped.*, 1936, **8**, 664.

⁴ Toomey, John A., Takacs, W. S., and Tischer, Linda A., *J. Ped.*, 1943, **23**, 168.

toxin, the filtrate obtained from coliform organisms growing in beef broth;⁵ (b) poliomyelitis virus; (c) virus in "enteric" toxin and (d) sterile physiological saline. Two experiments were made with each test suspension, in the first of which a drop of material was placed on the fourth leaf from the tip of 6 plants and rubbed in with a smooth spatula; a second set of 6 plants were each injected with a drop of the same test substance just below the third internode. None of the 48 plants showed any reaction. Growth was neither disturbed nor stunted by the rubbing nor by the injections of any

of the test suspensions.

We were not able to demonstrate any injury to the plant though it might be possible that virus could be present without producing any obvious disease in the host. Therefore, the plants which received virus were ground, the material filtered, and the fluid obtained was injected into one monkey (2 cc intracerebrally—I.C.), 3 Eastern cotton rats (0.06 cc I.C.—0.5 cc subcutaneously—S.Q.), 3 white rats (0.06 cc I.C.—0.5 cc S.Q.) and 3 mice (0.03 cc I.C.—0.5 cc S.Q.). No symptoms developed in any of the animals.

Thus, we have not been able to demonstrate that poliomyelitis virus can either live or multiply in the tomato plant.

⁵ Toomey, John A., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 1015.

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Effect of Sodium Alkyl Sulfate on Peptic Activity of Gastric Contents in Man and *In vitro*.

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Recent studies by Shoch and Fogelson¹ and by us² have shown that sodium alkyl sulfate, a synthetic detergent of the anionic series, is capable of eliminating the peptic activity of gastric juice *in vitro*. This effect is produced without any significant deviation in pH. A similar inhibition of peptic activity by this detergent has been demonstrated *in vivo*³ and has greatly increased the survival time of dogs with ulcers induced experimentally by the massive histamine injection technic described by Wangenstein and his coworkers.⁴ The purpose of this communication is to present further data regarding the effect of sodium alkyl sulfate* on the peptic activity of the gastric contents in man and *in vitro*.

The gastric contents were partially aspirated in 3 adult male patients with duodenal ulcer every 2 hours from 8 a.m. to 8 p.m. The 8 a.m. sample served as a fasting control for each experiment. The peptic activity of the gastric contents was measured during the administration of 90 cc of an equal mixture of milk and cream alone at hourly intervals from 8:30 a.m. to 7:30 p.m. and together with varying amounts of sodium

⁴ Walpole, S. H., Vareo, R. L., Code, C. F., and Wangenstein, O. H., PROC. SOC. EXP. BIOL. AND MED., 1940, **44**, 619; Vareo, R. L., Code, C. F., Walpole, S. H., and Wangenstein, O. H., *Am. J. Physiol.*, 1941, **33**, 475.

* Supplied in generous amounts by Dr. S. J. Fogelson and by the Abbott Laboratories, North Chicago, Illinois. Chemical name, sodium lauryl sulfate; formula $\text{NaC}_{12}\text{H}_{25}\text{SO}_4$. Molecular weight, 288.3. The preparation contains 64.2% lauryl alcohol and 33.3% SO_4 . It is a white crystalline solution of highest purity, soluble in water producing a neutral solution. Its principal property is that of reducing surface tension.

¹ Shoch, D., and Fogelson, S. J., PROC. SOC. EXP. BIOL. AND MED., 1942, **50**, 304.

² Kirsner, J. B., and Wolff, R. A., to be published.

³ Shoch, D., and Fogelson, S. J., *Quart. Bull. Northwest. U. Med. Sch.*, 1942.