
An epidemic of acute stomatitis was observed among children attending the Children's Hospital of Philadelphia. The cases were clinically similar, manifesting fever, irritability, anorexia, and painful mouth. Examination showed swollen, spongy gums, with or without scattered aphthous ulcers or widespread ulceration of mucous membranes. Following the earlier investigations of Dodd and coworkers in America and Burnett and Williams in Australia, 18 such patients were examined for the presence of herpes simplex virus in saliva. The content of herpes-neutralizing antibodies in blood taken during illness was compared with that taken during convalescence. Herpes virus was demonstrable in 14 of the 18 patients by means of inoculating the saliva onto the scarified cornae of rabbits. In a positive case the rabbit developed a kerato-conjunctivitis and sometimes encephalitis. Rabbits recovering from this treatment resisted lethal doses of a known strain of herpes simplex virus. From rabbits the virus was established in mice. Using serial dilutions of virus mixed with an equal amount of undiluted serum inoculated intracerebrally in mice, antibodies were demonstrated during convalescence but not during acute illness. In five family epidemics the incubation period was 2 to 6 days. Stomatitis is the main manifestation of primary infection with herpes simplex virus.


EXPERIENCE IN AN EPIDEMIC OF POLIOMYELITIS IN THE MIDDLE WEST. Milton J. Rose, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

BACTERIAL SYMBIOSIS: INOCULATION STUDIES IN MAN. S. S. Greenbaum, Department of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa.

Phagedena is a term used for certain ulcerative lesions of the skin. Phagedenic ulcers have a destructive appearance, are acute in their action, chronic
in their duration and show a decided tendency to invade neighboring tissue. They begin as a rule in a chancroid, rarely a chancre, often in tertiary syphilides and exceptionally in an eelmymatous lesion or in normal skin, which as a rule has been traumatized and, occasionally, directly.

It has long been believed that phagedena represents a mixed infection with pyogenic organisms of special virulence, for the primary types; or that it is a superadded particularly virulent infection by one or several organisms in association, for the secondary types. Studies in other cases as in our own have shown that the number and kind of organisms in phagedenic ulcers vary.

Six patients with geometric phagedena were studied for (1) organisms in the existing lesion, (2) auto-inoculability of such ulcers and for the organisms in the auto-inoculation ulcers, (3) the virulence of the organisms (obtained from the existing ulcers) as developed by their injection separately and together in viable form intracutaneously in the patients with these ulcers.

Auto-inoculation performed in two of the cases was positive. Intracutaneous injection of viable organisms failed to produce disease but intracutaneous injections of mixed viable organisms resulted in the production of ulcers similar to the original lesion. From these induced ulcers the original organisms were recovered. Symbiosis, therefore, appears to be one of the factors in the production of geometric phagedena.

**Bacteriology of the Dental Pulp.**


**A General Outline of the Methods for the Cultivation of Anaerobic Microorganisms.** Harry E. Morton, Department of Bacteriology, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

**The Maintenance of Aerobic, Microaerophilic and Anaerobic Conditions in a Petri Dish.** Abraham Cantor, Department of Public Health and Preventive Medicine, School of Medicine, University of Pennsylvania, Philadelphia, Pa. (J. Bact., 41, 155-70. 1941).


**The Use of Thioglycollate Medium.** Carl J. Bucher, Jefferson Hospital, Philadelphia, Pa.

**The Use of Smillie's Jar.** Helen Lynch, Department of Research Surgery, School of Medicine, University of Pennsylvania, Philadelphia, Pa.

**The Use of a Modified Smillie's Jar.** James S. Forrester, University of Pennsylvania Hospital, Philadelphia, Pa. and John T. Bauer, Pennsylvania Hospital, Philadelphia, Pa.

**The Use of the McIntosh-Fildes Jar.** James S. Forrester, University of Pennsylvania Hospital, Philadelphia, Pa. and John T. Bauer, Pennsylvania Hospital, Philadelphia, Pa.

**The Use of the Weiss-Czarnetzky Method.** S. Brandt Rose, Philadelphia General Hospital, Philadelphia, Pa.

**The Use of (A) the Varney Jar and (B) the Brewer Jar.** Ruth E. Miller, Woman's Medical College, Philadelphia, Pa.
A Modified McIntosh-Fildes Method. E. H. Spaulding, Temple University School of Medicine, Philadelphia, Pa. (J. Bact., 38, 243 (1939))

One Hundred and Fifty-First Meeting, Philadelphia County Medical Society Building, March 25, 1941, Philadelphia, Pa.

Antigenic Structure of the Group A Hemolytic Streptococci; Some Properties of the Type-Specific Protein and the Group-Specific Polysaccharide. Charles A. Zittle, Department of Bacteriology, School of Medicine, University of Pennsylvania, Philadelphia, Pa.

Previous studies showed that the type-specific component of N/20 HCl extracts of streptococci was a protein; about 35% of nucleic acid was associated with acid precipitates of the protein. Further study has shown the protein and nucleic acid are in salt-like combination; they can be separated by precipitation of the protein with saturated neutral ammonium sulfate. The nucleic acid-free protein was homogeneous in electrophoretic and ultracentrifugal and diffusion studies, by means of the former an isoelectric point at pH 5.4 was determined; from the latter studies a molecular weight of 40,000 and an axial ratio of 20:1 was calculated. The type-specific proteins of the two types studied (types 1 and 6) cross-reacted to some degree with antisera against their respective strains of streptococci.

The group-specific polysaccharide was obtained with formamide by Fuller's method from the residue remaining after the extraction of the type-specific protein. Most of the polysaccharide was retained by a cellophane membrane. Preparations containing 1.0% nitrogen have been obtained; the completely purified polysaccharide may be nitrogen-free. The polysaccharide has reacted with streptococcal antisera in dilutions exceeding 1:10^6. In electrophoretic experiments the polysaccharide had negligible mobility and hence belongs to the group of "neutral" polysaccharides.

Isolation and Properties of Pigmented Heavy Particles from Streptococcus pyogenes. M. G. Seavog, J. Smolens and Kurt G. Stern, Department of Bacteriology, University of Pennsylvania, School of Medicine, Philadelphia, Pa. and The Laboratory of Physiological Chemistry, Yale University, New Haven, Conn. (In press, J. Biol. Chem.)

Action of Crystalline Pepsin on Diphtheria Antitoxin and Pneumococcus Antibody from the Horse. A. M. Pappenheimer, Jr., and M. L. Petermann, Department of Bacteriology, School of Medicine, University of Pennsylvania, Philadelphia, Pa. and the Department of Chemistry, University of Wisconsin, Madison, Wis. (In press, Science).

A Study of the Relationship Between the Virus of Influenza A and Filterable Components of
NORMAL LUNGS. L. A. Chambers and Werner Henle, Department of Pediatrics, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Andrews, Elford, and Tang established the commonly accepted diameter of 80-120 m\(\mu\) for the virus of influenza by ultrafiltration of infected lung tissue emulsions. We have isolated and concentrated particles of this size by differential centrifugation of Berkfeld filtrates from emulsions of infected mouse lungs and from the lungs of normal mice.

The infectious and normal particles were not significantly different in chemical constitution, physical properties, or appearance under the electron microscope.

The infectious particles are agglutinated but not neutralized by serum against normal lung particles. This suggests a passive carrier role for the 100 m\(\mu\) bodies.

Extra embryonic fluids from infected chicks have been found to possess high infectious titers associated with extremely low total protein concentrations. Furthermore, only a fraction of the virus is removed from such fluids by a centrifugal force adequate for sedimentation of particles 100 m\(\mu\) in diameter. The diffusion velocity of the infectious unit corresponds with that of a sphere of 6 m\(\mu\) diameter assuming a density of 1.3.

Absorption of the ultracentrifuged egg fluids with normal lung particles results in almost complete removal of the virus, and transfer of the pathogenicity to the particles. This demonstrates that a component of normal lung cells (possibly mitochondria) can act as a passive carrier of the small infectious unit.


Analytical diffusion has been applied to a study of three viruses, namely, influenza A, mouse encephalomyelitis, and vaccinia.

The results from influenza diffusion warranted the assumption that the virus existed in two distinct fractions: about 99% of the active material appeared to be present in particles 200 m\(\mu\) in diameter, approximately, and about 1% in particles 6 m\(\mu\) in diameter, approximately.

The results from encephalomyelitis diffusion suggested that the virus preparation was quite inhomogeneous, with 10% of it in particles about 15 m\(\mu\) in diameter.

The results with vaccinia diffusion suggested that nearly all the active material was present in particles about 200 m\(\mu\) in diameter, and only about 0.01% in particles 6 m\(\mu\) in diameter.

Since particles 100 to 300 m\(\mu\) in diameter have been observed by other investigators in numerous normal tissues, and in particular in normal mouse lung suspensions, the suggestion has been made that in the viruses investigated such particles act as virus carriers, and that the actual size of the virus unit is that of a low molecular-weight protein.

ONE HUNDRED AND FIFTY-SECOND MEETING, PHILADELPHIA COUNTY MEDICAL SOCIETY BUILDING, APRIL 22, 1941, PHILADELPHIA, PA.

CULTURE STUDIES OF GONORRHEAL INFECTION IN WOMEN. J. F. Ma-
Comparison of Media and Laboratory Results in Gonococcus Cultures. C. J. Van Slyke, United States Public Health Service, Stappleton, N. Y.

One Hundred and Fifty-third Meeting, Philadelphia County Medical Society Building, May 27, 1941, Philadelphia, Pa.

The Pigments from Variants of Micrococcus Tetracus. Hobart A. Reimann, Jefferson Medical College Hospital, Philadelphia, Pa., and Carl Eckler, Minnesota State Department of Health, Minneapolis, Minn.

In previous publications in this journal a dissociative pattern of Micrococcus tetracus was described. Four variant types were derived from the "white" form isolated from a patient. The five types were named white, yellow, pink, pink-yellow, and brown according to the color of the colonies of the respective types.

Attempts were made to identify the various pigments by use of the Zeiss grating comparison spectrometer. The following pigments were recognized in the respective type strains; yellow—xanthophyll; white—no pigment; pink—rhodoxanthin; mucoid-pink—lycopene; pink-yellow—\(\gamma\) carotin or rubixanthin and others unidentified; brown —\(\gamma\) carotin or rubixanthin and others unidentified.


The skin sensitivity to tuberculin in tuberculous and non-tuberculous persons has been studied by means of a series of graduated tuberculin tests. In the complete series there were 12 test doses which contained amounts of a special lot of PPD ranging from 1/100 billionth mgm. to 1 mgm. Each successive test dose contained an amount of tuberculin 10 times greater than that of the immediately preceding test dose.

On the basis of the observations made in this study it appears that, with very few exceptions, persons with tuberculous or those who have been in contact with it have skin reactions to small doses of tuberculin and that practically all persons will have a skin reaction if a sufficiently concentrated solution of tuberculin is injected. A number of factors contributed to the conclusion that reactions which occurred only to extremely large doses of tuberculin were non-specific. If this interpretation is a correct one, especial significance is attached to it since the supposed non-specific type of reaction was noted after injection of 0.01 mgm. PPD, an amount only 2 times greater that that contained in the present second testing strength of PPD.

Mold Allergy. George I. Blumstein, Clinic of Allergy and Immunology, Temple University School of Medicine, Philadelphia, Pa.

Mold spores may be demonstrated in the atmosphere at all times of the year, being present in greatly increased quantities during the months of May to October, inclusive. It is during this time that luxuriant mold growth occurs on all types of vegetation and
is eventually blown off into the air. The heat and moisture present during the summer months may account for high spore production during this time. Two methods of demonstrating spore dissemination were discussed: the gravity slide method and the culture plate method. The relative advantages of each were discussed and a suggestion made that all future surveys use both methods of determining atmospheric spore concentration.

The method of preparing extracts was discussed in detail. All the extracts used in this experiment were prepared from killed organisms. Large groups of allergic patients of all types were skin tested with thirteen different mold extracts. Those giving positive skin tests were further tested with the powdered mold by the nasal test. Correlation between clinical symptoms and atmospheric mold concentration was attempted in all suspicious cases of mold allergy. Using the above criteria to arrive at a clinical and etiologic diagnosis, it was possible to identify 10 such cases from a group of 400; an incidence of 2.5%. *Alternaria* was the most important mold in this group. Seven out of the 10 patients with mold allergy also manifested clinical pollen allergy. Clinically there is generally an absence of eye signs, a paucity of nasal ones, and a preponderance of bronchial (asthmatic) symptoms. Hypersensitization with mold extracts afforded symptomatic relief in each case that was treated.

A CONFIRMED TEST FOR STREPTOCOCCI FROM AIR. *Dorothy B. Wells*, Laboratories for the Study of Air-borne Infection, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Last year¹, ² lactose tryptose broth was suggested as a presumptive test for acid-forming organisms of human origin in air. The occurrence of many acid-forming staphylococci precluded the assumption that this test represented acid-forming streptococci of nasopharyngeal origin. This communication presents a confirmatory test for such streptococci.

Garrod³ showed that a combination of tellurite and gentian violet in blood serum broth would inhibit most bacteria but support the growth of alpha and beta streptococci. This medium was first used as a selective medium for confirming these organisms in positive presumptive tubes. A later simplification has been developed by omitting the tellurite and using the same proportion (0.002%) gentian violet in blood agar plates. This medium cannot be distinguished from ordinary blood agar, but inhibits acid-forming staphylococci and most of the other organisms obtained in air samples which mask streptococci in positive presumptive tubes. Results show that seldom do such other organisms smother the green streptococci but that these usually grow abundantly almost as if they had been streaked from pure cultures on ordinary blood agar. Recoveries of streptococci during the summer months in a clean surgical ward have almost equalled the average recovery by former methods during winter under worse average conditions of ventilation. Furthermore, the test achieves the practical simplicity of eosine methylene blue agar in the isolation of *Escherichia coli* from drinking water.

---