TABLE OF RESULTS.

Substance	Mixture of sand, 90% caffeine, 10%		Mixture of sand, 90% theobromine, 10%		Mixture of corn starch, 90% theobromine, 10%		Mixture of corn starch, 90% morphine, 10%	
Amount used	2 grams		2 grams		2 grams		2 grams	
Extracting solvent	Ether (U. S. P.)		Chlorof. (U. S. P.)		Chlorof. (U. S. P.)		Chlorof. (U. S. P.)	
Indication as to use of device	Without device	With device	Without device	With device	Without device	With device	Without device	With device
Volume of siphoning reservoir	40 cc.	14 cc.	40 cc.	16 cc.	40 cc.	16 cc.	40 cc.	15 cc.
Frequency of siphoning (per hour)	28	80	14	38	24	96		86
Duration of experiment	1/4 hour	1/4 hour	1/2 hour	1/2 hour	1 hour	1 hour	1 hour	1 hour
Weight of substance extracted, in grams	0.0522	0.1152	0.0085	0.0125	0.0140	0.0880	0.0380	0.0420

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THE PARAMECIAL METHOD FOR DETERMINING THE PHENOL COEFFICIENT OF DISINFECTANTS.*

BY ALBERT SCHNEIDER.

1. *The Test Organism.*—The test organism used is an approximately pure culture of *Paramecium caudatum*. The most suitable culture medium[1] for this organism is filtered horse manure extract in water to which dried bread crumbs, crackers, or fish meal is added.

2. *The Mixing Loop.*—Use 1 mm. wire, platinum or alloy. Bend one end into a loop the internal diameter of which is exactly 3 mm. and fasten the other end into a glass rod or other convenient holder. The wire should be about 6 cm. long. The loop must be closed or quite nearly so in order that it will hold the liquids readily.

3. *Making the Loop Mixtures.*—Take up one loopful of the solution to be tested and deposit it upon the middle of a carefully cleaned dry slide. Rinse the loop in running water and dry in a Bunsen flame and allow to cool. Take up one loopful of the paramecial culture and add it to and mix with the drop of the disinfectant upon the slide.

4. *Examining the Loop Mixture.*—At once place the slide with the loop mixture upon the stage of a compound microscope and examine under the low power

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* Contribution for the "Stunt Show" of the Scientific Section, A. Ph. A., Asheville meeting, 1923.

[1] We shall try the thyroid extract culture medium this year.

(about 90 diameters). If all of the paramecia are killed promptly a higher dilution of the disinfectant must be tried. If the paramecia continue alive for a period of three minutes or longer, a stronger solution must be tried. These trials must be continued until the solution strength is found which will kill all of the paramecia present within *three minutes' time* (but not within one minute of time), at a room temperature of approximately 20° C. This dilution shall be known as the minimal killing dose, indicated by M. K. D.

5. *The Phenol Standard.*—Make a 1 per cent. solution of pure phenol (crystals) in distilled water, and determine the M. K. D. as described under (4). This M. K. D. of phenol shall be the standard of comparison, or the phenol standard, given as 1.

6. *The Phenol Coefficient.*—The phenol coefficient of the compared disinfectant is obtained by dividing its killing dilution by the killing dilution of pure phenol. The killing dilution of pure phenol when used in the manner herein described is 1:500.

7. *Determining the Death of the Test Organism.*—The behavior of the test organism toward the test solutions may be stated as follows:

a. Period of excitation, usually very temporary, followed by,

b. Retardation of motion; slowing and even complete inhibition of the vesicular pulse; then,

c. Slow progressive motion with axial rotation, spinning top motion.

d. Cessation of progressive motion, the cilia still vibrating,

e. Projection of trichocysts, and,

f. Protrusion of vacuoles, which invariably means death.

The test solutions of the disinfectants are to be made with distilled water and the mixing done by vigorous shaking. The presence of large numbers of bacteria in the paramecial culture, and of other contaminants, does not materially affect the reaction of the paramecia toward the test solutions. Cover glasses are not required and all of the observations are made under the low power of the compound microscope. Dilutions of liquid disinfectants are to be made volumetrically, and the initial solution of solid but soluble disinfectants is to be made gravimetrically.

HYPOCHLORITE SOLUTIONS.

BY RUTH M. DAVIS AND H. A. LANGENHAN.

(*Continued from p. 222, March* JOURNAL A. PH. A.)

(NO. 4) PRESERVATION OF HYPOCHLORITE SOLUTIONS.

The alkaline earth hypochlorite solutions are unstable. Their stability may be influenced by the chlorine concentration; by the temperature applied during the preparation and storing of the solution; and by the alkalinity of the finished product.

Faraday was the first to note the importance of the chlorine concentration. He found that by using an excess of chlorine gas a solution was obtained differing from Labarraque's in chemical constituents and reaction. "*Labarraque's Solution* gave off a slight odor of chlorine, on being heated yielded no chlorine, on being