

physico-chemical system adequate to explain the pH changes in *Tradescantia*. The conclusion seems inescapable that this is the type of system found in the living cell, for the mechanism of production of E.M.F. is probably common to all forms of living matter. That the cell surface is both a "membrane" and a "solid" conductor of electrons is no real paradox.

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The Demonstration of *Mycobacterium Tuberculosis* in Exudates, Tissues and Body Fluids.

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Five hundred and twenty-seven parallel attempts were made to recover the *Mycobacterium tuberculosis* from various materials taken from lesions suspected of being tuberculous, using guinea pig inoculation and Corper's gentian violet-glycerol-water-potato slants.

TABLE I.

	Tissue	Urine ureteral	Urine voided	Urine bladder	Exudate	Spinal fluid	Sputum	Stool	Gastric content	Cyst fluid	Total
Pig neg. Cult. neg.	48	202	10	10	70	15	5	2		1	363
Pig pos. Cult. pos.	15	17	2		10	3			1		48
Pig pos. Cult. neg.	9	4			11	3			1		28
Pig pos. Cult. inc.		2		1	1						4
Pig neg. Cult. pos.	3	2	1		1						7
Pig inc. Cult. pos.	4				1						5
Pig neg. Cult. inc.	2	13		2	5		1				23
Pig inc. Cult. neg.	9	20		3	8		3				43
Pig inc. Cult. inc.	1	1	2		1					1	6
Total	91	261	15	16	108	21	9	2	2	2	527
Agreement, positive	48	Disagreement, pig negative or incomplete								12	
Agreement, negative	363	Disagreement, culture negative or incomplete								32	

Pig superior:		Culture superior:	
Pig positive, culture negative	28	Culture positive, pig negative	7
Pig positive, culture incomplete	4	Culture positive, pig incomplete	5
Pig negative, culture incomplete	23	Culture negative, pig incomplete	43
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The material for seeding on the medium was at first treated with 6% sulphuric acid and later with 5% oxalic acid when Corper reported more favorable results with the latter method. The treatment in either instance was for 30 minutes at 37°C. Cultures were incubated for 12 weeks, and guinea pigs were killed in 6 weeks if they had not already died. Failure to complete the guinea pig tests was due almost entirely to death by secondary infection before tuberculous lesions had opportunity to develop. Failure to complete the culture tests was divided between loss by breakage in the centrifugalization, overgrowth by fungi or spore forming organisms, each 8 times, and 7 instances in which the material was treated for a longer period of time than that recommended and hence the negative results were discarded.

It is concluded that, from the standpoint of a diagnosis of tuberculosis, the guinea pig method surpasses the culture as a routine procedure.

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The Rôle of Proteins in Growth, Reproduction and Lactation. II. The Influence of Whole Liver on Growth and Lactation.*

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It was reported¹ that second generation albino rats on 2 diets, A and B, containing 15 and 20% liver protein respectively, were unable to nurse their young. The failure of lactation was not caused by a deficiency of vitamins since the administration of increased amounts of yeast and cod liver oil as well as the daily administration of 0.3 cc. of wheat germ oil led to no improvement. The daily administration of 0.5 to 1.0 gm. of dried whole liver (dried in a vacuum at 100°C.) also had no beneficial effect on lactation, where-

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¹ Smith, H. G., *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **28**, 597.