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The Metabolism of Chlorella.

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These tests were carried out using the following species of Chlorella: *C. variegatus, viscosa, vulgaris var. genevensis, rubescens, luteo-viridis,* together with one specie not recognized. In addition *Chlorococcus humicola* and *Mannochloris bacillaris* were included within the series.

The base medium was Knopf's solution diluted 3 times with distilled water. When needed, it was rendered semisolid by 1.5% agar.

Nitrates are reduced to nitrites by 3 of these strains, C. sp?, *C. vulgaris,* and *C. rubescens* as indicated both by sulphanilic acid and by starch iodide. This reaction is slow but was definite in one month. On the other hand nitrite is oxidized to nitrate by *C. luteo-viridis* as proven by diphenylamine and again the test period was 30 days. Gelatine is liquefied very slowly by *C. rubescens.* Certain split products of protein are favorable to increased growth since peptone in amounts varying between 0.1% and 0.7% increase the growth of *C. vulgaris, C. rubescens,* and *C. luteo-viridis.* Urea in concentrations of 0.1% and 0.02% inhibits the growth of these 3 stains partially also, while ammonium carbonate in similar concentration was unfavorable to *C. rubescens* and *C. luteo-viridis* but stimulated slightly the growth of *C. vulgaris.*

TABLE I.

		Absorbed with																					
		6 R								11 R		22 R		27 R		80 R							
		1:100	1:160	1:200	1:320	1:400	1:640	1:800	1:1280	407 R	408 R	408 R	411 R	411 R	Unabsorbed								
Bovine source		−	−	−	−	−	−	−	−	−	−	∓	−	−	+	+	+	±	∓	−	−	−	−
		+	−	−	−	−	−	−	−	+	+	+	−	−	+	+	+	+	+	+	+	+	∓	−
Porcine source		+	−	−	−	−	−	−	−	+	+	+	−	−	+	+	+	+	+	+	+	+	∓	−
		402 R								407 R		408 R		411 R		Unabsorbed							

capacity; one absorbed to a lesser degree than the other bovine strains, but more completely than did any of the porcine. No. 80 gave results similar to the porcine strains. This culture, although of bovine origin, has other characteristics of a porcine strain.

Of the strains of porcine source, 6 showed slight absorbing power, one (402) was only slightly less active than bovine strain 22, and one (409) gave a reaction similar to the bovine group.

The strain isolated from the spontaneously-infected guinea pig behaved like the majority of bovine origin.

The serologic difference shown here between the "R" variant suggests a division of the *Brucella abortus* strains into 2 groups.

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Maturation of Human Embryonic Ova.

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Sexual differentiation in the human embryo has taken place by the end of the seventh week of embryonic life. From this time until the third month simple growth and cellular multiplication occurs. With the third month the early maturation phases of the ova are found. These phases consist of the usual maturation phases present in the adult male germ cells, the formation of the leptonema, synizesis, pachynema, and diplonema, stages which do not occur in the adult female. Furthermore, in the development of the leptonema, prochromosomes like those of insects are formed and then resolved into the leptotene threads. Prochromosomes have not hitherto been seen in the mammalia. By five and one-half months the prochromosomes have nearly all disappeared and the type of maturation is the same as that in the adult male.

The appearance of prochromosomes seems to be a recapitulation stage such as is found in some other organs of the developing embryo. The maturation of embryonic ova may plausibly be due to the action of a maternal hormone incapable of affecting male embryonic germ cells.

The embryonic germ cells disappear before adult life is reached and the ova developed during adult life do not pass through the above maturation phases preliminary to the maturation divisions.