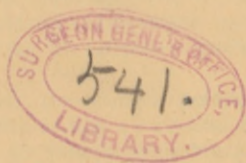


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A new Chromogenic
bacillus - bacillus Coeruleus.



A NEW CHROMOGENIC BACILLUS—BACILLUS COERULEUS.

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IN a cultivation of the organisms in water from the Schuylkill River (Belmont Reservoir), planted January 15, 1886, there appeared a fungus of intense blue color, which, on examination and further culture, proved to be an unknown species of chromogenic bacillus.

It grows well on boiled potato at ordinary temperatures, with at first a beautiful dark blue hue, deepening into an intense blue-black, as the coloring grows old. The colonies when developed fully are marked by numerous cup-shaped depressions with elevated borders. It is aërobic so far as its color is concerned, the cultures in the mass of gelatine-peptone in tubes invariably developing as colorless growths, while the upper or surface part of the same culture shows a bluish tinge, faint because of the thinness of the stratum. Liquefaction of the surface invariably attends the cultures in peptone gelatine. The color of the bacillus is contained in the cells, and cannot be dissolved out by water or alcohol; nor is it affected by acids. On potato,

¹ Vide report in THE MEDICAL NEWS, Aug. 27, 1887.



where the color is best seen, the bacillus foci grow only on the surface, not penetrating to any depth, as is the case with the micrococcus cyaneus.

The bacillus, as seen under the microscope, is from 0.002 to 0.0025 mm. in length, and 0.0005 in width. It frequently develops in leptothrix-like chains. Some few of the individuals on the specimens mounted present a comma shape, although this is probably accidental, due to overheating in the preparation. An excellent stain for it is the ordinary methyl-violet. For its recognition the higher powers of the microscope should be employed, although the individuals can be discovered with a good $\frac{1}{8}$ th inch lens.

It is possible that this form might be confused with bacillus syncyaneus, bacillus violaceus, or micrococcus cyaneus. The color, however, is so intense and in old colonies so dark that it alone should differentiate in every instance.

The coloring matter of *bacillus syncyaneus* (Beiträge z. Biologie d. Pflanzen, vol. iii. p. 187) is of a lighter shade, and is changed by soda or potash to a peach-blossom pink, ammonia changing it to a violet color—to none of which reactions the color of *bacillus coeruleus* responds. The *bacillus violaceus* (Ann. Societ. Nat. Moden., xiv. 1880, and Botanisch. Centralblatt, 1, 1528) grows best on solution of egg albumin, and the coloring is of a characteristic hue, and the color readily soluble in alcohol. The *micrococcus cyaneus* (Cohn, Schröter) grows well on boiled potato, as does bacillus coeruleus, but penetrates with its blue color deep into the slice; its color is soluble in water, the solution at first green and later blue. This micrococcus very readily produces softening and liquefaction, while the bacillus coeruleus produces but a

comparatively small amount of such change ; and microscopically the diagnosis is readily made. The *micrococcus violaceus* is distinguishable from the bacillus coeruleus by its characteristic hue and its mode of growth (in gelatinous drops of a violet color), and later by the microscope.

Like the other chromogenic bacilli generally, the bacillus coeruleus seems to be non-pathogenic, and is interesting only so far as being an addition to our knowledge of microscopic botany.

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comparatively small amount of such change; and although the diagnosis is readily made. The organism is distinguishable from the common bacillus by its characteristic purplish color, and later by the intense color, and later by the intense color.

Like the other chromogenic bacilli generally, the pathogenic organism seems to be non-pathogenic, and is interesting only as far as being an addition to our knowledge of microscopic botany.

REPORTED BY DR. J. H. HARRIS.

