

NOTES

Black Beauty Out of *Mycobacterium fortuitum* Cruz

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A black-pigmented strain developed spontaneously from a typical strain of *Mycobacterium fortuitum*.

In 1958, our strain no. 1000 was received from C. H. Collins, Public Health Service, County Hall, London, as his strain no. 3 of *Mycobacterium* species, a strain described as non-pigmented (Fig. 1A) and arylsulfatase-positive. Shortly after its arrival, cultures of the strain were lyophilized. Our tests and observations (3), completed in 1959, showed strain no. 1000 to be a typical strain of *M. fortuitum* (Table 1).

After 10 years of storage at 4 C, during a routine examination of our lyophilized cultures, strain no. 1000 was revived on a slant of yeast-dextrose-agar (9). One black-pigmented colony appeared among several isolated colonies above the confluent growth on the slant. The black colony was picked, and growth of the resulting deeply pigmented strain is shown in Fig. 1B. In addition to its black growth, this strain produced some dark, soluble pigment. Cultures of the strain were strongly acid-fast, and its morphology was typical of the more rapidly growing mycobacteria. Except for less activity on trehalose, the black-pigmented strain had the same physiological characteristics as its parent strain (Table 1).

The pigmentation of cultures of *M. fortuitum* on various media, varying from straw-colored to black, has been described (1, 2, 5-8, 10). Occasionally, old cultures of *M. fortuitum* on glycerol-agar (containing soil extract) formed a deep black soluble pigment (4); the growth, however, remained whitish, and subcultures of these pigment-forming old cultures did not blacken the medium.

The black-pigmented daughter strain from our strain no. 1000 is the only *M. fortuitum* to produce black growth that we have observed. As shown in Fig. 1C, sectors of the original whitish growth appeared in some cultures of the black strain, and the dark pigment is not a stable property of the strain.

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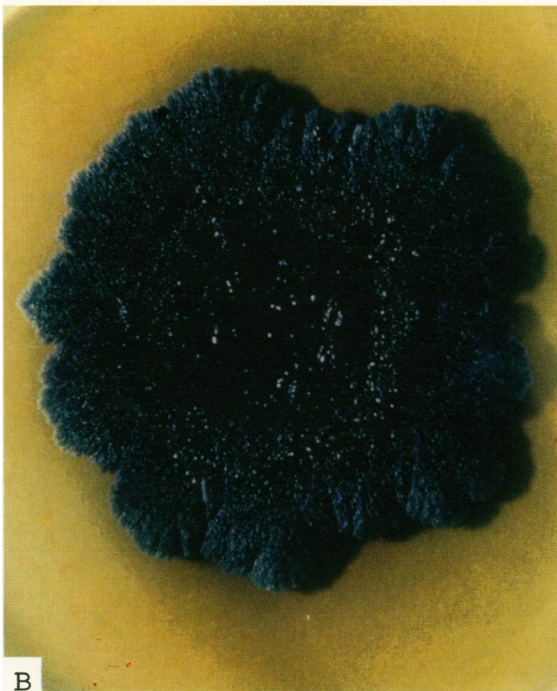
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FIG. 1. Growth of *Mycobacterium fortuitum* on yeast-dextrose-agar. (A) Original strain no. 1000; (B, C) strain no. 1000 black. Incubation, 3 weeks. $\times 2$.



A



B



C

TABLE 1. *Some physiological reactions of Mycobacterium fortuitum*

Property	Strain no. 1000 (1959)	Strain no. 1000 black (1968)	150 Strains of <i>M. fortuitum</i>
Decomposition of			
Casein	- ^a	-	- (0) ^b
Tyrosine	-	-	- (0)
Urea	+	+	+ (94)
Deamination of phenylalanine			
	-	-	- (1)
Hydrolysis of			
Starch	+	+	+ (94)
Hippurate	+	+	+ (95)
Growth at			
45 C	-	-	- (5)
40 C	+	+	± (70)
28 C	+	+	+ (100)
Survival at 60 C, 4 hr	-	-	- (0)
Acid from			
Arabinose	-	-	- (2)
Dulcitol	-	-	- (0)
Erythritol	-	-	- (12)
Galactose	-	-	- (8)
Glucose	+	+	+ (98)
Inositol	-	-	- (9)
Lactose	-	-	- (0)
Mannitol	-	-	± (28)
Mannose	+	+	+ (98)
α-m-D-Glucoside	-	-	- (0)
Raffinose	-	-	- (1)
Rhamnose	-	-	- (0)
Sorbitol	-	-	- (3)
Trehalose	+	Tr ^c	+ (96)
Xylose	-	-	- (3)
Utilization of			
Benzoate	-	-	- (3)
Citrate	+	+	± (82)
Lactate	+	+	+ (98)
Malate	+	+	+ (97)
Mucate	-	-	- (0)
Oxalate	-	-	- (0)
Succinate	+	+	+ (98)
Growth on dyes			
Methyl violet	+	+	+ (99)
Pyronin	+	+	+ (100)
Color change of MacConkey agar			
	+	+	+ (98)
Resistance to			
Penicillin, 10 units	+	+	+ (100)
Bacitracin, 10 units	+	+	+ (85)
Production of arylsulfatase, 3 days			
	+	+	+ (96)
Growth in (0.2%) salicylate broth	-	-	± (83) ^d

^a Symbols: +, 85 to 100% of strains positive; ±, 50 to 84% of strains positive; ∓, 15 to 49% of strains positive; -, 0 to 14% of strains positive.

^b Numbers in parentheses represent per cent positive strains.

^c Trace.

^d Only 52 strains were tested.