for successful exposures with Microfile or Adox KB21. Thereafter, either the agar dried up or the emulsion peeled off the film backing. With the Polaroid film, where unfortunately the grain is less even, a 1-hr exposure was sufficient.

After the film was processed, the exposed areas were examined microscopically. The growth pattern and mycelial distribution of the edge of a growing culture where the hyphae are distinct, separate, and in one layer were clearly duplicated in the emulsion grain. Figures 9, 10, and 11 show the amount of detail observable. The negatives were then photomicrographed with Microfile film and the pictures enlarged when printed. In Fig. 9 the arrows indicate clamp connections, and in Fig. 11 the branching pattern is readily evident. Finer structural details cannot be made out, and it remains to find an emulsion of equivalent speed, but with considerably smaller even grains, before the area of light emission within the cell can be determined. For the present, it appears that light emission occurs throughout the cell.

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FIG. 11. Panus stipticus, direct contact auto-photograph showing branching mycelium. Microfile, 3-hr exposure. Negative photomicrographed; figure constitutes a negative print. × 1,000.

SCREW-SHAPED CONTAMINANT OF DISTILLED WATER

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A note by D. Bobb and C. M. Downs (J. Bacteriol. 84:1120, 1962), on spiral-like structures formed by aggregations of Q fever rickettsiae, includes four micrographs, three of which show the structures which drew the attention of the authors.

These spiral-like, or screw-shaped, structures have been observed for many years. Baillie had some electron micrographs at the exhibition which was held simultaneously with the Paris Congress on electron microscopy, 1950. At an electron microscopy congress in Hamburg, 1951, Wigand and Peters (Z. Wiss. Mikroskopie 60:405, 1952) showed similar electron micrographs. Another picture was published by the present author (Experientia 8:355, 1952).

It is generally agreed that the structure is most probably a microorganism. As far as I
FIG. 1. Unshadowed positive print of electron micrograph of screw-shaped organism from distilled water.

FIG. 2. Shadowed negative print of electron micrograph of screw-shaped organism from distilled water; ca. 12,500X.

know, it has not been described as such, because it was never cultivated. Its occurrence in distilled water is the reason electron microscopists have found it so often. However, it may have been known long before the electron microscope was invented, for the curious screw-shaped filaments can also be identified in dry mounts in a light microscope.

From time to time, papers on diverse subjects are illustrated by micrographs, some of which may be pictures of these microorganisms, although the authors have taken them for aberrant forms of Mycobacterium tuberculosis (Malfatti, Rev. Asoc. Med. Arg. 63, No. 661–662, Fig. 2, 1949), chromosomes (Yasuzumi et al., Experientia 8:218, 1952; Polli, Biochim. Biophys. Acta 10:215, 1953), or in the latest case aggregates of rickettsiae.

On rare occasions bifurcated forms have been found. Figure 1 shows an unshadowed specimen printed in positive, looking a left-handed screw. Negative prints, however, rightly suggest that the screw is right-handed (Fig. 2).

DEVICE FOR THE ISOLATION OF SPORES

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Numerous techniques and mechanical devices have been used since the time of Lister to isolate single cells or spores of microorganisms for the initiation of homogeneous cultures. Collection of colonies from a dilution streak, the simplest technique of all, remains in general the most use-