The occurrence of characteristic corkscrew sperms with twisted middle pieces in 15–49 per cent by the differential sperm count in two sterile bulls (primarily fertile) seems to indicate the existence of a hitherto rare form of testis degeneration, where the specific blastema for the middle piece, including the so-called mitochondrial sheet, is affected.

Of these two sterile bulls it was only possible to follow one during a short period before slaughter, while semen samples from the other were examined during some months, showing that the occurrence of corkscrew-sperms increased regularly, from 23 to 49 per cent, while, as a decrease in sperm concentration indicated, degeneration of the testis tissue was in progress.

Only Bretschneider[4] (drawing 114) seems to have encountered a similar phenomenon, with a sort of macrohelix-structure in the middle pieces in 20 per cent of the sperms, but unfortunately no photographs and no information about the fertility of the bull in question are given. These results seem to indicate that investigators who are doing morphological sperm examinations for fertility in bulls should pay full attention to the condition of the middle pieces, and in future work also include corkscrew-sperms in the group of primary sperm abnormalities.

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Hair as a Substrate for Non-Keratinolytic Fungi

DURING a study of the fungal succession occurring on hair decomposing in contact with soil, it has become apparent that hair, either autoclaved or sterilized with propylene oxide, can support the limited growth of many fungi which are not keratinolytic. Thus species of *Mortierella*, *Cunninghamella* and *Chaetomium*, as well as of many genera of the Fungi Imperfecti, for example, *Aspergillus*, *Gliocladium*, *Penicillium*, *Alternaria*, *Curvularia*, *Epicoccum*, *Helminthosporium*, *Phoma*, *Pyrenochaeta*, grow sparsely on the hair surface and produce spores there.

The ease with which such fructifications can be examined has led to the use of hair as a fungal substrate for class purposes while teaching mycology. Fine human hair, sterilized either by autoclaving at 15 lb. pressure for 15 min. or with propylene oxide[1], is placed on the surface of a thin layer of agar of low nutrient status contained in a Petri dish, and the agar is inoculated with the fungus to be studied. Within a few days, the mycelium has spread from the agar to colonize sparsely the hair surface, and scattered conidiophores are produced. A hair is then carefully removed with forceps and mounted on a slide in any suitable mounting fluid. The preparation, under a cover-slip, can then be readily examined under a microscope. The great advantage of the method lies in the ease with which an inexperienced worker can obtain an undisturbed preparation of conidiophores and conidia, clearly revealing the exact method of production of the latter, a detail which is assuming an increasing importance in taxonomy[2]. Although the mode of production of conidia remains typical, the poverty of hair as a substrate for the majority of fungi occasionally leads to a simplification in conidiophore morphology. Thus in the genus *Penicillium*, the penicillus is frequently of a simpler nature than the corresponding structure produced on an agar medium, so that the hair technique is not satisfactory when specific identification is attempted in such genera.

The method has also proved advantageous in promoting either the asexual reproduction of apparently sterile cultures or the production of more easily characterized structures in those cultures which produce nothing but an ill-defined mass of simple slime spores on the normal agar media. In many cases cultures of either of these types have readily produced pycnidia on the hair surface.

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Discoloration of Wool Fibres by a Fungus

A COMPLAINT by a wool processer in Japan that part of a consignment of New Zealand raw fleece wool in the coarse-quality range was affected by a black discoloration which could not be removed in the ordinary wool scouring process, or by any common solvent, has been investigated and the cause of the discoloration established as being due to a fungus growing in the fibres.

In outward appearance the distal part of the staple was dark coloured and similar in appearance to wool contaminated by dust and dirt. All parts of the fleece appeared to be equally affected. On scouring or after solvent-treatment the affected staple tip remained dark. In the region of discoloration, fibres had a very low tensile strength characteristic of extreme weathering.

Microscopic examination showed the fibre to be outwardly intact. Large fungal hyphæ were obvious within the fibre and cross-sections showed a severe mechanical disruption of cortical cells within the fibre, this no doubt contributing to the loss of tensile strength. Within the fibre the hyphæ are moniliform in shape and dark in colour. At irregular intervals the hyphæ anastomose and fruiting structures are formed which finally reached the surface by breaking through overlying cortical and cuticular cells of the fibres. Minute hyaline ellipsoidal unicellular or two-celled spores are produced in these structures.

The fungus was isolated from affected wool by placing short lengths of the infected fibres on tryptone glucose extract agar ('Difco') to which 0·01 gm./ml. of 'Terramycin hydrochloride' had been added aseptically just prior to pouring the plates. The fungus, which grew out readily, was transferred to slants of the same medium, where it formed fruiting bodies profusely. The fungus is reported by the Commonwealth Mycological Institute to be a species of *Peyronellaea*, not recorded from wool but close to *Peyronellaea glomerata* (Corda) Goidanich, and has been disposed in the Commonwealth Mycological Institute herbarium as *I.M.I.* 74752.