Waters, H., Moore, D. & Butler, R.D. (1970). Wild-type strains of *Coprinus lagopus* unable to produce sclerotia. *Microbial Genetics Bulletin*, **32**: 14-15.

When grown on a complete medium many of the wild-type strains of *C. lagopus* produce sclerotia, whether the mycelium is mono- or dikaryotic. Sclerotia appear to be of two distinct types: aerial, and submerged in the medium. These differ in basic structure as well as in spatial position relative to the main mycelial mat. Sclerotia are only rarely formed within the mycelial mat of the main colony and those that are found have the structural and ultrastructural characteristics of aerial sclerotia. Observations so far made of the morphogenesis of sclerotia suggest that this process can broadly be separated into the following stages:

(i) vigorous growth out of the plane of the main colony either upwards in the formation of aerial sclerotia or downwards for submerged sclerotia;
(ii) formation of loosely aggregated hyphal masses;
(iii) 'delimitation' of sclerotia by the compacting of the aggregated regions;
(iv) formation of immature sclerotia by differentiation of external (and presumably internal) cells often but not invariably accompanied by the formation of a liquid exudate;
(v) maturation by final packing of external (rind-) cells and their development of very thick, layered and pigmented cell walls.

A developmental sequence such as this is an obvious candidate for genetic investigation. There are many stages which genetic lesions could affect, yet the processes and structures involved are about as simple as can reasonably be expected in the higher fungi so that positive results should be obtained with relative ease.

Through the courtesy of Drs. P. R. Day (Connecticut Agricultural Experiment Station) and D. H. Morgan (John Innes Institute) we have obtained and examined fifty of the known natural wild-type strains of this fungus. The majority were able to produce sclerotia although there were marked strain-specific differences in the number produced. However, four strains (stock numbers BC9/6,6; B1; 2H1; L1) have been identified as being definitely unable to produce sclerotia and a further four (H2; H5; H9; A3) as probable non-producers. Pilot crosses between BC9/6,6 and sclerotium producers indicate that the inability to produce sclerotia segregates as a single genetic character. No intrinsic difficulties in genetic experimentation have been experienced although the data accrue slowly because long incubation periods (50-60 days) are advisable to ensure certainty in classification. Complementation tests have been performed by constructing appropriate dikaryons and examining for sclerotium production. The indications are that the definite non-producers complement each other, implying that at least four functional genes are represented. Provisionally, therefore, we conclude that we have identified four genes involved in the formation of sclerotia; we suggest the designation *scl* for such genes. Further experiments are being carried out to continue this investigation of sclerotium morphogenesis.---H. Waters - is in receipt of an S.R.C. Research studentship. Department of Botany, The University, Manchester, M13 9PL, England.