

ERGOT FAMILY (*Hypocreaceae*)

ERGOT OF RYE (*Spermædia Clavus* [D.C.] Fries.)
(*Claviceps purpurea* Tul.)

PLATE I.

COMMON NAMES: Ergot of rye is generally known and spoken of as ergot; but occasionally in European literature, reference is found to "spur kernels," "blight kernels," and "spurred rye."

DESCRIPTION: Ergot is a form of a fungus parasitic on grasses, one of the best known species being that found on rye. The fungus is most easily recognized in the second stage of its development, when the hard, dark purple or almost black masses (sclerotia) are seen at intervals on the heads of rye, where they have usurped the position of the seed of their host. These sclerotia, or ergots, as they are popularly called, may be observed from June till late in the autumn, according to the nature of the species of ergot and host plant. In the autumn, they fall to the ground and remain in a resting stage throughout the winter. When the warm weather begins again, they show signs of awakening life by the appearance of small cracks, through which diminutive stalked bodies (stromata) make their way. In the head of the stroma are numerous flask-shaped cavities (perithecia) each of which contains a number of narrow cells (asci) and each of these in its turn contains eight thread-like spores or reproductive bodies. The mature spores escape from the perithecia about the time of flowering of the host plant, rye or grass, as the case may be. When a spore falls into a floret of a suitable host plant, it develops a so-called mycelium, and a honey-like substance called "honeydew" is abundantly produced. The honeydew exudes in large glistening drops from the floret. This sweet substance, which is eagerly sought by midges, flies and other insects, is filled with very minute microscopic bodies (conidia), another reproductive form of the fungus. The conidia are capable of immediate germination and are carried by insects to other plants. Thus what is known as "ergot disease" spreads rapidly throughout the flowering season of its host. The mycelial threads continue to develop, and in time form a dark compact mass two or three times the size of the seed of the host plant. This new ergot eventually falls to the ground and the life cycle is complete.

DISTRIBUTION AND HOST PLANTS: Dr. Staeger, of Berne, Switzerland, has firmly established the fact that each species of ergot has its own circle of hosts within which it moves exclusively. He has shown by successful experiments carried on for a number of years past, that ergot of rye will infect barley and the following grasses:

- Reed canary grass (*Phalaris arundinacea* L.);
- Sweet vernal grass (*Anthraxanthum odoratum* L.);
- Sweet or holy grass (*Hierochloa odorata* [L.] Wahlenb.);
- Meadow foxtail (*Alopecurus pratensis* L.);