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THE  
MEDICAL  
SCIENCES

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A REFERENCE HANDBOOK  
OF  
**THE MEDICAL SCIENCES**

EMBRACING THE ENTIRE RANGE OF  
SCIENTIFIC AND PRACTICAL MEDICINE  
AND  
ALLIED SCIENCE

*BY VARIOUS WRITERS*

A NEW EDITION, COMPLETELY REVISED AND REWRITTEN

EDITED BY ALBERT H. BUCK, M.D.  
NEW YORK CITY

VOLUME IV.

ILLUSTRATED BY CHROMOLITHOGRAPHS AND EIGHT HUNDRED AND FIFTY-  
NINE HALF-TONE AND WOOD ENGRAVINGS

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A REFERENCE HANDBOOK

OF

THE MEDICAL SCIENCES.

Ergot.  
Ergot.

ERGOT (*Ergota*, U. S. P., Br. P.; *Secale cornutum*, Ph. G.; *Ergot de Seigle*, Codex Med.), *Fungus Secalis*; *Muterkorn*; Spurred Rye, etc., consists of the sclerotium of *Claviceps purpurea* (Fries) Tulasne, Order *Ascomycetes*, replacing the grains of rye, *Secale cereale* Linn. Our Pharmacopœia prescribes that ergot should be only moderately dried, preserved in a closed vessel, chloroformed occasionally to prevent the development of insects, and rejected as unfit for use when more than a year old. This remarkable parasite is developed in the flowers of several cultivated grains and of a considerable number of wild grasses, germinating upon the ovaries, which it aborts and finally destroys, and growing in the place of these organs like some monstrosity of the flowers themselves. It attains to a sort of maturity as the grain ripens in the fall, and in this condition remains quiescent until the following season, when, if in a suitable situation, as upon the surface of damp ground, it produces spores in time to attack the blossoming grasses and grains of the succeeding year. It is this resting-stage which constitutes the "sclerotium."



Fig. 1940.—Ear of Rye with two Ergots. Natural size. (From Luerssen.)

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The first noticeable evidence of the presence of this fungus in a spikelet, say of rye or wheat, is a sticky, unpleasant-smelling, very sweet, liquid exudation from the interior of one of the flowers, which accumulates in considerable quantity, and may even drop off or run down the stem. It consists mostly of some sort of sugar, and is probably a decomposition product of the affected pistil, etc. Like similar results of the irritation of vegetable tissues by other fungi, as well as by aphides, etc., it is known as "honey dew," and designated the "honey dew of rye." It is a certain sign that ergot will follow. Ants and beetles are fond of it, flock to the ears where it is to be found, and

as it contains cells capable of developing into ergot in other flowers, they assist in spreading the blight. Bees are said to avoid it. A soft, spongy or cottony, mould-like tissue, consisting of long, fine, weak filiform cells, felted together at this time, envelops and permeates the ovary; as it grows the latter becomes disorganized and disappears, and the mycelium of the ergot, as this structure is called, takes its place. In a short time after, a very redundant and much wrinkled layer of perpendicular cells covers the surface of the mycelium, and produces an innumerable number of minute oblong false spores (*conidia*), which are dis-

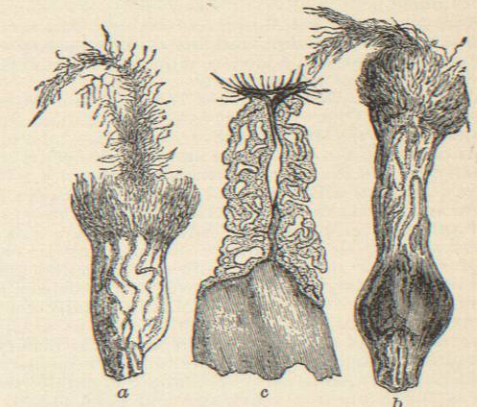


Fig. 1941.—a, Ovary of Rye with Commencing Growth of Claviceps in the Sphaecelia Stage; b, the same with the parasite further developed; the hairy styles and the remains of the ovary are borne at the top of the mycelium, the commencing sclerotium or ergot is shown at the base; c, section of specimen a little older than b, and rather more magnified; the two styles and aborted ovary are seen at the top, the ruminated sphaecelia in the middle portion, and the compact smooth ergot below. (Luerssen.)

charged into the adhesive "honey dew" just mentioned. These are capable of reproducing the plant, and are the first method of propagation. In this stage it was at one time considered to be an adult and perfect plant, and named *Sphaecelia segetum* (Léveillé, 1827) (see Fig. 1941). A further development next takes place in the formation and growth of the *sclerotium*. This begins as a condensation of tissue at the base of the "sphaecelium" just described, the cells of which become shorter and thicker-walled, as well as more closely packed together. The mass becomes firm and brittle as it develops, the outer surface assumes a purple-black color, and it finally grows to a long spur-like, curved, irregularly cylindrical body protruding half its length or more beyond the plumes and paleæ of the rye. The "sphaecelium" atrophies as the sclerotium grows, and is carried up on the apex, as