

POPULAR EDITION.

BULLETIN No. 235.

JULY, 1903.

New York Agricultural Experiment Station.

GENEVA, N. Y.



TWO NEW APPLE ROTTS.

F. H. HALL AND H. J. EUSTACE.

PUBLISHED BY THE STATION.

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*Connected with Fertilizer Control.

†Absent on leave.

‡In Second Judicial Department.

POPULAR EDITION*

OF

BULLETIN No. 235.

TWO NEW APPLE ROTS.

F. H. HALL.

**Another
follower of
scab.**

Apple scab, annoying enough in itself, was a still more serious pest last year in opening the way for two destructive rots affecting the fruit. "Pink rot," the more widespread of the two, was described in Bulletin No. 227; and it is probable that very few growers have been aware that there is a second rot. However, apples sent to the Station late in the season from a cold storage house were found to be rotting on the surface from the attacks of a new fungus. In general appearance this rot is very similar to "pink rot," and it always occurs on scabbed spots as does the latter. It is a deeper rot, however, sometimes extending to the core, while the "pink rot" areas are rarely more than an eighth of an inch deep. "Pink rot" spots are marked by the occurrence of white or pinkish growths at the center; but the new rot does not show in this way until made to do so by artificial conditions—the heat and moisture of a culture chamber. This rot also gives but little taste to the affected tissue, while the pink rot causes a decided bitterness.

**Extent, dam-
age, cause,
prevention.**

The amount of damage to stored apples by this trouble is probably not large, but specimens have been received from many localities. It has been observed under ordinary conditions only on Baldwin and Rhode Island Greening; but has been grown in the laboratory on thirty-five varieties of apples and five of pears. It grew well upon any apple or pear into which

* This is a brief review of Bulletin No. 235 of this Station, on Two Decays of Stored Apples, by H. J. Eustace. Any one specially interested in the detailed account of the investigations will be furnished, on application, with a copy of the complete bulletin. The names of those who so request will be placed on the Station mailing list to receive future bulletins, popular or complete, as desired. Bulletins are issued at irregular intervals, as investigations are completed, not monthly.

it was introduced through a puncture, but has no power to break the skin of sound fruit.

It is due to the growth of a fungus of the genus *Hypochmus*, a species altogether distinct from the one causing "pink rot," and one belonging to an entirely different group. Like the latter, the fungus has always been regarded as a harmless one, growing on dead wood and similar materials; but the peculiar weather conditions of 1902 seemed to change the habit of both species and to make them, for the time, at least, dangerous diseases.

Since they can enter the fruit only through scab ruptures or similar injury, they need not be feared in orchards where scab is controlled by thorough spraying.

Core-rot of Baldwins. Another perplexing trouble brought to the attention of the Station during the past season is the core-rot of Baldwin apples. Fruit apparently sound was found to be badly affected at the core with a dry rot which made the tissue within the core line rotten, dry and tasteless, while surrounded on all sides by healthy flesh. Laboratory investigations failed to show any fungus growth or any bacteria; so it must be concluded that the trouble is a physiological one, but so far no cause can be assigned. Both poorly ripened and perfect fruits appeared to be equally affected; size, color and flavor bore no relation to the amount of rot; the conditions of ordinary storage,—whether damp or dry, good ventilation or poor—did not influence the decay; fruit grown on sand or on heavy clay loam suffered alike; and heavy fertilizing with phosphoric acid exerted no influence. Apples in cold storage (30°-32°) were entirely free from the trouble. Baldwin apples were quite generally affected, other varieties almost free from the disease. Of 122 varieties in the Station storage house only 7 besides the Baldwins showed the disease, and these to but a limited extent. It is possible that overbearing may have had some connection with the trouble, or be responsible for it, since most Baldwin apple trees bore a very heavy crop in 1902; or the peculiar climatic conditions of the season may have caused the rotting. Aside from these two conditions, working singly or together, no cause for the trouble can at present be advanced; and these do not afford a very satisfactory basis of explanation.

The facts which stand out prominently are that, as with the Baldwin fruit spot, this variety is the one chiefly affected; and that apples in cold storage are free from the trouble.