

Corn Borer in Russia

Entomology

The European corn borer, on which the United States is now waging costly war, is an old and troublesome story in Russia. It is a pest throughout the southern half of European Russia, and occurs in less destructive numbers in an additional stretch of territory to the north. Its northernmost extension carries it to the latitude of the Gulf of Finland, which is as far north as Hudson Bay in the western hemisphere. At this latitude in Russia it is not counted especially bad, but serious outbreaks occur in the new Baltic nations, formerly a part of the old Empire.

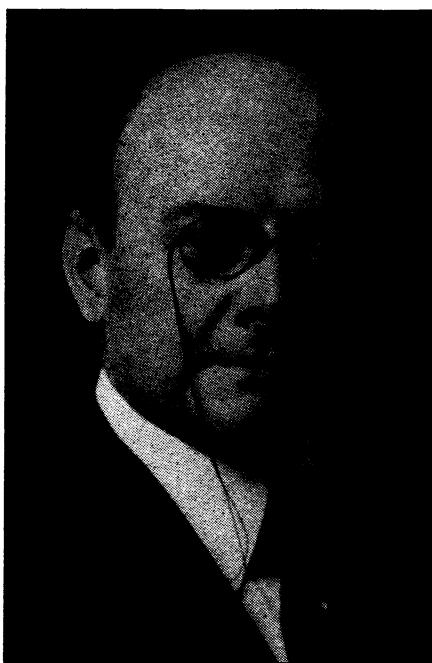
The borer plague is felt especially in the South, where the cornfields of Russia merge with those of Roumania, and swing eastward across the shores of the Black Sea and up the great river valleys. In the eastern part of the south Russian grain belt corn gives way to millet, which is better adapted to the drier steppes; but the borer afflicts the millet as well as the corn, and efforts are now being made to find varieties less susceptible to its attack.

Russia has no measures against the pest that have not already been recommended in the United States. The best means are the most laborious: a thorough clean-up and burning of all stalks that are not fed to cattle. The burning must be thorough, too, for according to A. Dobrodeyer, a well-known agricultural scientist, borers have often been seen emerging from stalks that were charred black on the outside, apparently none the worse for the experience. He has also seen borers coming out of stalks that had been left lying about in farm yards after the feeding of cattle, although these had been tramped about for weeks in snow and frozen mud.

The great increase in corn borer infestation in Russia seems to have taken place shortly before the World War. In 1908 a 20 per cent. infestation was observed in the fields of the Government (State) of Ekaterienoslav. This initial infestation took approximately an additional 20 per cent. of the stalks in each of the following years, until by 1912 practically every stalk in the afflicted fields had its borers.

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Rickets in Art—Continued



DR. JOHN A. FOOTE, who has found evidence of rickets in the babies painted by old masters

under expert inspection indubitable evidence of rickets.

An arm bone of a pre-Columbian Indian youth that was dug up from a mound in Kentucky reposes in the same collection. It is curved to the point of deformity and demonstrates that there was at least one aborigine that could have done with tasty doses of cod liver oil during his papoosehood.

The practice of wrapping babies up in swaddling clothes, followed by practically all ancient peoples except the Egyptians and Spartan Greeks, is in itself evidence of the prevalence of this so-called modern disease in antiquity, according to Dr. Foote. Ancient physicians whose writings have come down to us, frankly admit that swaddling was done for the purpose of keeping the new-born infant's legs straight, thereby indicating that bowlegged boys and girls have been all too common among the nations of early Europe. Solanus of Ephesus, a well known medico of the second century A. D. declares: "Since swaddling is an important reinforcement and a preventive of deformities, it is best not to free the infant from its protection until the body has become strong enough to remove all fear of the appearance of irregularities of form. The infant's feet may become crooked from unwise attempts at walking. Frequent examples of such deformity are seen in Rome, due in (*Turn to next page*)

Sunspots and Radio

Physics

Future radio engineers may be able to look at the sun through a telescope and then tell how the presence or absence of spots will affect the transmission of radio waves, as a result of an investigation now under way in Cambridge, Mass., with the cooperation of physicists and astronomers.

There has just been installed in the Harvard Astronomical Laboratory, under the direction of Dr. Harlan T. Stetson, professor of astronomy at Harvard, apparatus to study the relation of spots and radio. Greenleaf W. Pickard, Boston radio engineer, designed the apparatus and installed it for use in cooperation with studies to give the size and number of spots.

It is not yet possible to say whether or not combination of radio data with observation of the sun can ever be used to predict earthly weather conditions, said Dr. Stetson. "However," he said, "observations are beginning to make us feel confident that there is a direct connection between conditions in the solar atmosphere and certain atmospheric disturbances on the earth. It seems not unlikely that with the further study of the bearing of sunspots upon radio reception it will be possible to make allowances for the solar disturbances, and by so doing discover more closely than ever before the correlation of radio reception with temperature, pressure and other meteorological phenomena.

"Just what happens on the earth when a sunspot appears on the side of the sun towards us is not fully known. It is believed that electrified particles discharged from the disturbed region on the sun, hurling through space, bombard the upper atmosphere of the earth and are responsible for an increased ionization of the latter, which is responsible for the modification of the intensity of the radio waves."

The station from which the signals will be sent, which are measured at the Harvard Laboratory, is WBBM, Chicago. The apparatus, which automatically records signal strength, as received in Cambridge, is carefully calibrated each day and makes it possible to record the measurement in absolute units of electrical intensity.

Dr. Stetson explained the apparatus was so designed that it would measure the intensity of the carrier wave and would scarcely be affected at all by superimposed modulations caused by the broadcasting of music.

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