cultures was made on a detached stem. Inoculated tissues were discolored from light to dark brown. Four days after pot-grown plants of IR8 were inoculated at the maximum tillering stage, symptoms began to appear. A lesion extended upward and downward from the inoculation point; the leaf sheath became brown. But the lesion was restricted only to the inoculated internodes in which the stem tissues as well as the leaf sheath became rotten and discolored. The outer leaves of infected plants senesced rapidly.

Initial bacteriological studies indicated that the causal bacterium may be similar to that which causes "bacterium bruzone disease" of rice in Hungary or "sheath brown rot'' of rice in Japan. According to Goto, the pathogen was closely related to *Pseudomonas marginalis,* but different from the "sheath rot" caused by a strain of *Erwinia carotovora* in Indonesia in 1964. The etiology and identification of the bacterium are being studied. ■

Occurrence of rice ragged stunt disease in West Bengal, India

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In the 1978 wet season, natural infection of rice ragged stunt disease was observed on Jaya in a trial plot of the Rice Production Training Institute farm. About 50% of the rice hills were affected. The population of brown planthopper *Nilaparvata lugens* was low at the time. Scattered diseased plants were later found in isolated pockets in the region. This is the first report of ragged stunt in West Bengal. The primary symptoms of the disease observed were stunting (photo 1), vein-swelling on ragged leaves (photo 2), distorted twisting of the flag leaf, and incomplete emergence of the panicle (photo 3).

1. Healthy plant (right) and stunted plant (left) infected with ragged stunt disease.

2. Vein-swelling on ragged leaves.

3. Incomplete emergence of panicle and twisted flag leaf.

Serological studies of rice ragged stunt virus

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Crude or partially purified material containing B-spiked subviral particles (SVP) of rice ragged stunt virus (RRSV) from diseased plants (mailed to Italy from the Philippines) was injected into rabbits for antiserum production. When tested by the gel diffusion method, the antiserum had a titer of 1/16 against healthy rice material, and at least 1/64 against RRSV preparations. When the antiserum was tested by inmunoelectron microscopy using the decoration technique, specific antibody halos around SVP of RRSV were detected up to a dilution of 1/256. Preparations of SVP of maize rough dwarf virus (MRDV), oat sterile dwarf virus (OSDV), and pangola stunt virus (PSV) were not decorated by the RRSV antiserum. Likewise, the antisera of MRDV, OSDV, PSV, and sugarcane Fiji disease virus failed to decorate SVP of RRSV. Thus, RRSV is not serologically related to those viruses that make up the fijiviruses group, but might be a new member of a plant reovirus group having affinities with the fijiviruses. Furthermore, the antiserum reacted positively to diseased materials collected in India, Indonesia, Philippines, and Thailand. Hence. in addition to being similar in symptomatology and transmission, the RRSV in those countries are serologically related.

Effect of nitrogen on lesion development in rice resistant to bacterial blight

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It is generally believed that increases in nitrogen fertilizer increase bacterial blight infection. If rices with different resistance genes and pathotypes with specific virulence are identified, then scientists can evaluate interactions among nitrogen fertilizer and those factors. Initial greenhouse experiments showed that the lesion length on varieties with intermediate (moderate or partial) resistance, such as Pulo and Sailboro 302, increased with increased nitrogen level. But the total lesion length was considerably less than that on rices with