Do plants use pinocytosis (engulfing of aliquots of the external solution by invaginations of the plasmalemma, which are then pinched off inside the cell) as the principal means of transporting major nutrients across the plasmalemma? W. J. Cram concludes, mainly on the basis of physiological evidence, that pinocytosis does not and cannot occur in plant cells. He points out that the selectivity in uptake of nutrients, competition between substances, differential effects on influx of changes in internal states, and associated electric currents in plant cells are incompatible with the characteristics of pinocytosis as described for animal cells. Also, the water flow associated with pinocytosis would generate high values of turgor that could not be sustained, and the energy to overcome turgor would be greater than the cell could supply. (New Phytol. 84:1-17)

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Agglutination of strains of *Erwinia* spp. with potato lectin is not correlated with the strains' ability to cause soft rot of potato, according to A. Ghanekar and M. C. M. Pérombelon. In the authors' studies, potato lectin had no adverse effects on growth and pathogenicity of *E. carotovora*. The amount of lectin in tubers declined during storage, but anaerobic conditions had no effect on lectin content. These findings provide indirect evidence against an involvement of lectin in resistance of potato to *E. carotovora* and are in contrast to implication of lectins (carbohydrate-binding proteins) in the specificity of cell surface recognition between legumes and symbiotic strains of *Rhizobium* and in agglutination of avirulent cells of *Pseudomonas solanacearum* in potato. (Phytopathol. Z. 98:137-149)

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Cutinase, an extracellular enzyme that catalyzes hydrolysis of cutin, has been isolated from *Fusarium roseum* 'Culmorum,' *F. roseum* 'Sambucinum,' *Ulocladium consortiale*, *Streptomyces scabies*, and *Helminthosporium sativum* by T. S. Lin and P. E. Kolattukudy. All the enzymes have a molecular weight of about 25,000 and are glycoproteins. Each enzyme is chemically unique, although the cutinases from the *Fusarium* spp. are immunologically similar. The investigators had used the same methods earlier to isolate and purify cutinase from *F. solani* f. sp. *pisi*, and that work provided definitive evidence for the significance of cutinase to a successful infection. The pathogen was shown to secrete cutinase during infection of *Pisum sativum*, and specific inhibition of cutinase prevented infection. (Physiol. Plant Pathol. 17:1-5)

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Certain strains of the *Pseudomonas fluorescens-putida* group used as seed inoculants have been shown to promote growth and increase yield of potatoes and other plants. The pseudomonads colonize roots and have been termed "plant growth-promoting rhizobacteria" (PGPR). J. W. Kloepper and associates conducted the original investigations with PGPR and now have evidence that siderophores (natural chelating agents) produced by the bacteria may sequester iron in the root zone, making it unavailable to rhizoplane microorganisms pathogenic to the plant. Fe^{III} EDTA counteracted PGPR's effect. The authors propose that the microorganisms displaced or suppressed by PGPR cannot compete in obtaining enough iron for growth. (Nature 286:885-886)

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Resistance to anthracnose caused by *Colletotrichum lagenarium* can be induced systemically in cucumber by localized infections with any of three pathogens: tobacco necrosis virus (TNV), *Pseudomonas lachrymans*, or *C. lagenarium*. Systemic resistance to anthracnose appeared 24–48 hr after the first leaf was inoculated with TNV, coinciding with appearance of necrotic lesions. Removing the leaf with TNV lesions did not lessen resistance to anthracnose in other leaves on the plant, report A. E. Jenns and J. Kuć. Systemic resistance induced by *C. lagenarium* and *P. lachrymans* was not detected until 96 hr after inoculation, coinciding with the first symptoms of anthracnose and angular leaf spot, respectively, on the inoculated leaf. The authors conclude that the induced resistance in cucumber depends on a common function of the infectious agents. (Physiol. Plant Pathol. 17:81-91)

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The current list of viroids—closed, single-stranded circular RNA of about 120,000 molecular weight—includes potato spindle tuber viroid (PSTV), citrus exocortis viroid (CEV), chrysanthemum stunt viroid (CSV), and cucumber pale fruit viroid (CPFV). Of 53 arbitrarily chosen plant species used in agriculture and horticulture in the Netherlands, 18 were susceptible and 12 were sensitive to CPFV infection, 13 were susceptible and 4 were sensitive to CSV infection, and 25 were susceptible and 9 were sensitive to CEV infection, report W. Th. Runia and D. Peters. When CPFV was serially passed through various hosts, host adaptation was noticed. Evidence suggests that CPFV, CSV, and CEV differ only slightly, since each produced similar symptoms in potato and tomato. Apparently, however, only chrysanthemums and cucumbers are affected by viroid under natural or commercial conditions in the Netherlands. (Neth. J. Plant Pathol. 86:135-146)

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Tetraploid alfalfa yielded twice the dry matter as genetically comparable diploid alfalfa, according to W. T. Leps, W. J. Brill, and E. T. Bingham, who suggested greater N_2 fixation as the reason. Tetraploid plants had a higher rate of acetylene reduction than diploid plants during the first 10 days of seedling growth. Raising ploidy to octaploid did not increase N_2 fixation or dry matter production by the alfalfa plant. N_2 fixation was less inhibited by fertilizer nitrogen in tetraploid plants than in diploid plants. (Crop Sci. 10:427-430)

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Pseudomonas savastanoi causes tumorous outgrowths (knots) on olive and oleander by producing indole-3-acetic acid (IAA). The genes for IAA production by the pathogen are plasmid-coded, report L. Comai and T. Kosuge. Loss of a plasmid of 34×10^6 molecular weight resulted in inability to produce IAA; production capacity was restored by reintroducing the plasmid into IAA mutants by transformation. The plasmid is called pIAA1 and apparently is the determinant of pathogenicity in the interaction of *P. savastanoi* with olive or oleander. (J. Bacteriol. 143:950-957).

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Roots of *Lolium perenne* and *Plantago lanceolata*, commonly found together in permanent pasture in England, were shown by A. J. Heap and E. I. Newman to be linked by hyphae of vesicular-arbuscular mycorrhizae. Depending on persistence, these connections may aid nutrient cycling among plants. (New Phytol. 85:169-171)

Recent reports from fields related to plant pathology for inclusion in *Scientific News* may be sent to R. James Cook, 367 Johnson Hall, Washington State University, Pullman, WA 99164.