As an aid to further study along this line, small fish preserved in 10 per cent. formalin, from regions where mottled enamel is endemic, will be greatly appreciated.

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THE CYTOLOGY OF THE DIFFERENTIATING SPIRAL VESSEL IN RICINUS COMMUNIS

ALTHOUGH spiral vessels are probably considered the most commonplace elements in plant anatomy, I have been unable to find any detailed account of their differentiation. In spiral vessels the spiral thickening may extend uninterrupted throughout an entire developing internode. This continuity of the spiral appears comprehensible only if the spiral is laid down as a continuous unit, and is not a composite resulting from the fusion of spirals in vertically adjacent cells.

In *Ricinus communis* all stages of differentiation of the spiral vessels may be found. As soon as the future xylem elements, cut off from the cambium, begin to vacuolate, to expand and to elongate, the end walls of the vertically superimposed cells break down. The result is a coencyte traceable often throughout the entire length of the internode. The protoplasm is granular and is seen in all stages of vacuolation. The nuclei lie in vertical series numbering from ten to twenty and very often increase markedly in size. As is well known, the spiral thickening is laid down only when expansion is complete, and appears first as a faint unlignified cellulose band. Lignification follows, while protoplasm and nuclei remain intact and are observed in the fully differentiated element. The occurrence of the coenocytic phase of development explains the continuity of the spiral.

Further details of the process will be published shortly.

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MOTION-PICTURE SPEED NOMENCLATURE

DOES the translation of a simple, well-understood and widely used expression, "slow motion," into its Greek equivalent "bradykinetic" result in "a uniform terminology *which precludes confusion,*" as stated by Dr. Richards in SCIENCE for August 2, 1935, in the last paragraph of his article? Or does it result in the confusion evident in the immediately preceding paragraph, which states, "A *'bradykinetic'* film can not be obtained by *projecting* rapidly an 'isokinetic' film, *except within very narrow limits. . . .*"

Now any one mechanically inclined knows one can not obtain a slow motion picture by speeding up the projector, as the effect would obviously be the opposite of that desired. Would not this error have been noted by the proofreader if it was not "Greek" to him?

If the number of frames per second projected be placed over the number of frames per second photographed and the word "actual-speed" be added an expression will result that will be self-explanatory and give all the desired information at a glance. Example: "This is a 16/256 actual-speed film." This obviously means a sixteenth speed film and that everything moves in the projected picture at one sixteenth the speed the actual objects did. In a 16/8 actual-speed film they move at twice the actual speed.

MARTIN A. RYAN

BIRCH-BARK CANOES

I HAVE recently returned from Golden Lake, Ontario, where Indians still make birch-bark canoes for use, and sell them cheaper than factory-made canoes. They can make them for museum specimens without using such modern materials as nails.

Some museums may not know that such canoes are still made and available. Some owners of lakeside summer homes may not know that they can still get such canoes for use or merely as romantic lake-shore objects or lodge or dining-hall decorations, to be placed over mantels, etc.

I would be glad to help such museums and/or people to get in touch with Indians that I consider reliable, in order to help both parties concerned, especially as the Indian need of money and market would help keep alive a primitive North American industry.

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SCIENTIFIC BOOKS

BIOCHEMISTRY

Annual Review of Biochemistry. Edited by JAMES MURRAY LUCK. Vol. IV, Annual Review of Biochemistry, Ltd., Stanford University P. O., California, 1935.

THIS "Annual," now in its fourth year, has already taken its place as one of those indispensable books without which a biochemical library is no library at all. We biochemists are deeply indebted to Professor Luck, the editor of all four volumes, upon whom rests the main responsibility of production. Instead of covering each year the fathomless ocean known as bio-