Then, after the plane has changed its angle for landing, the fuselage is tilted upward by perhaps 15 degrees. One's intelligence therefore tells him that the ground is still horizontal, and that it is the window lines that have tilted upward. But the illusion takes charge and remains in charge. The window lines, which had been horizontal, continue to seem horizontal; the ground takes the blame, and seems to slope. The effect remains until the plane stops, or makes a turn at the end of the runway.

For the passenger, this is just another curious psychological experience; but it is conceivable that for the pilot, it might on occasion mean disaster. In landing by instruments, instruments can fail; and a daylight visual landing might have to be made. What then? It may be that with all plane designs ever produced up to now, the pilot can remain free from the effect. But some new design, perhaps combined with incidental shutting off of forward vision by frost or oil on the windshield, might place the pilot under the necessary conditions. Resulting confusion could have serious results.

Until some one makes tests, it would seem that to avoid the trouble, cockpit windows should have curved frames, rather than rectangular. This suggestion grows out of what one sees from the left-side window of the incident described. In addition to seeing the ground, a large part of my visual field was filled with a view of the wing and the nacelle. Obviously, these parts did not cause disorientation, even though they, like the right-hand window frames, had changed angle with respect to the ground. These parts present only curved outlines. Therefore, it may be that with all frame-of-reference lines curved, the disorientation would not occur.

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FROST RINGS IN LONGLEAF PINE

"FROST rings," abnormal zones of parenchymatous wood resulting from freezing temperatures during the growing season, are of common occurrence in northern and western trees.[1] To the writer's knowledge, however, their occurrence in longleaf pine (*Pinus palustris* Mill.) has not been previously reported.

Increment cores from second-growth stands of this species in southern Mississippi frequently have a conspicuous yellow- to tan-colored zone in the springwood of the 1932 ring. Microscopic examination shows the laterally displaced rays, distorted xylem elements and short-celled parenchyma that characterize frost injury. Weather Bureau records for Mississippi report the February of 1932 as the "warmest February in the records of this section beginning in 1888." The mean monthly temperature was 59.1° F., nearly 10 degrees higher than normal. This exceptionally warm period was followed by temperatures of 20° to 24° throughout southern Mississippi on March 9 and 10.[2]

Generally the injury is found in the beginning of the second or third ring from the pith, since usually only the 1- or 2-year-old shoots were affected. From 0 to 12 rows of normal springwood cells may intervene between the end of the 1931 growth and the frost ring, indicating the extent of growth previous to the period of freezing weather.

The malformation is present at breast height in most of the trees small enough to have been affected. Since second-growth longleaf is often marked by "false" rings and extremely narrow rings resulting from fire, the presence of a distinctive ring caused some years ago has been of service in growth measurements.

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SOUTHERN FOREST EXPERIMENT STATION

[1] A. S. Rhoads, *U. S. Dept. Agr. Bull.* 1131. 1923.

[2] U. S. Weather Bureau, Climatological Data, Mississippi Section, February, March, 1932.

THE SUPERVISION OF PUBLICATION

DR. ATHERTON SEIDELL, writing in SCIENCE,[1] finds some fault with the distribution of scientific contributions among scientific workers in view of the difficulty and expense to which the worker is put in obtaining for his study the articles in which he is interested.

Dr. Seidell tries to criticize constructively, for he offers a recommendation for the solution of the problem:

> It is evident [he states] that a complete reorganization of the present system of publishing the results of scientific investigation is needed. Toward this end an advisory council on publication should be organized in each country for the purpose of studying the existing periodicals and defining more precisely the character of the contributions to be published in each. A system of routing the original communications in accordance with the field covered by each journal should also be established. The more highly specialized periodicals produced in this manner would enable the subscribers to receive more papers in which they are interested and fewer on subjects with which they are not concerned. The individual research worker would find it to his advantage to subscribe to them, and the cost of their publication would thus be distributed to an increasing extent among those for whose special benefit they are produced. *The supervision of publication by a central agency in each country would probably result in the elimination of some journals* [italics mine *sic*] and avoidance of the many changes in character, policy, title, size, price, etc., in others which now so greatly complicate the collection and maintenance of complete sets of periodicals by libraries and the task of making bibliographic searches in them.

Dr. Seidell, now with the U. S. Public Health Ser-

[1] SCIENCE, 92: 345, 1940.