the fish have been at liberty for 30 days or more. The longest period of liberty to date is 99 days. It is believed, then, that this mark should be permanent unless the carbon particles are later absorbed.

In two out of the twelve fish recovered bearing the body cavity tags the celluloid tag was noticed before the metal tag and in one case the celluloid tag was completely overlooked. The incision was completely healed in every case after the fish had been at liberty for 70 to 80 days. The longest period of time that any of these fish were out is 89 days.

It would be premature as yet to give a definite estimate of the value or the permanency of these marks or their superiority over the strap tag. If the tattoo marks do not fade over a greater period of time than is here recorded, this type of mark would be almost ideal for the halibut; and if it is used in addition to the regular strap tag, as was done in the present experiment, it should aid in the recognition of very nearly all the tagged fish that might be recovered. Furthermore, it would give a clue to whether and in what numbers strap tags have been overlooked or lost in past experiments. This the body cavity tag may also do, though a somewhat higher mortality from the effects of this mark is indicated.

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RUBBER CONTENT OF GOLDENROD LEAVES AFFECTED BY LIGHT

THE leaves of the many wild species of goldenrod (Solidago) contain rubber, frequently to the extent of 3 to 6 per cent.;[1] and as much as 13 per cent. has been obtained from cultivated plants in experiments initiated by the late Thomas A. Edison at Fort Myers, Florida. The rubber content increases with the maturity of the leaves, but as soon as the leaves die they lose most of their rubber, whether remaining on the plants or lying on the ground. With a view to learning whether light is a factor in the rapid decline of rubber in the dead leaves, samples were exposed to sunlight in Cellophane envelopes of different colors for various periods of time. The use of Cellophane was suggested by Flint's work on light-sensitive lettuce seed.[2]

Three species of Solidago were included in the test, *Solidago leavenworthii, S. altissima* and *S. fistulosa,* and the leaf samples were exposed in red, blue, green and clear envelopes. Check samples in black paper envelopes were exposed with the colored envelopes. The leaves exposed in the red, green and blue envelopes showed notable losses in rubber content, and those in the clear envelopes lost most of their rubber, while material from the black envelopes showed no loss, but often a gain. Samples of *Solidago leavenworthii,* which analyzed 4.39 per cent. of rubber at the beginning of the experiment, gave the following percentages after one week of exposure in the different envelopes: clear 3.38, red 3.63, green 3.75, blue 3.89 and black 4.72. The corresponding percentages after two weeks of exposure were 1.98, 2.69, 2.74, 3.28, 6.27; after four weeks 2.00, 2.69, 2.94, 3.28, 6.00, and after six weeks 1.81, 2.25, 1.97, 2.65, 5.98. Results with the other species were consistent, and the data leave no doubt that light is a factor in reducing the rubber content of goldenrod leaves after harvesting.

Analyses were made later of leaf material from the envelopes that had been exposed and then stored for several weeks in the laboratory, and it was found that the rubber content of the leaves in the black envelopes had not declined but had increased, while material from the colored bags showed a further decline in rubber content. Thus the black-envelope sample of *S. leavenworthii,* that analyzed 6.27 per cent. after two weeks' exposure in the field, contained 7.34 per cent. after six weeks in the laboratory, and likewise the samples exposed for four and six weeks increased after two weeks in the laboratory, from 6.00 to 7.12 and from 5.98 to 6.70, respectively. These data were obtained from samples grown at Glenn Dale, Maryland, and were confirmed by samples from Savannah, Georgia, and Fort Myers, Florida, that had received similar treatment.

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[1] Loren G. Polhamus, *Jour. of Agricultural Research,* Vol. 47, No. 3, Aug. 1, 1933, pp. 149–152.
[2] Lewis H. Flint, SCIENCE, Vol. 80, pp. 38–40, 1934.

THE YOUNGEST MEMBER ELECTED TO THE NATIONAL ACADEMY OF SCIENCES

IN the minute on Carl Barus (1856–1935) published in SCIENCE for November 22, 1935, pp. 481–483, Professor Lindsay and I wrote that at the age of 36 Dr. Barus was elected "a member of the National Academy of Sciences in 1892—the youngest man [that is, in 1892] who had ever been so honored." This unchecked statement was taken from an autobiographical sketch. A friend has drawn attention to one of my own articles on Simon Newcomb (1835–1909) published in SCIENCE for December 22, 1916, p. 872, where I noted that Newcomb became a member on September 1, 1869, when 34 years of age. Professor J. McKeen Cattell has informed me that at a later date, namely 1899, Theodore W. Richards was elected a member at the age of 31. Has any member been elected who was younger than 31?

While referring to the National Academy may I point out the great need for a volume containing a