

the cause of rich green color on old copper roofs. Sulfur dioxide put into the air from burning coal provides the sulfur that reacts with the copper to form the patina.

But even badly polluted industrial atmospheres require 10 to 14 years to develop patina by natural weathering. Architects demanded a quicker action green coloring method.

A ten per cent. solution of specially conditioned ammonium sulfate was finally hit upon as the effective coloring chemical. After suitable treatment with this solution copper can be made to acquire a patina in 24 hours that compares with nature's product of 10 to 14 years of exposure. The complete process is described in *Metals and Alloys*.

In England success in forming patina by electrolytic methods has been reported and that process is said to take only fifteen minutes. Dr. W. H. J. Vernon of the British governmental Chemical and Research Laboratory at Teddington found that an ammonium sulfate solution treatment that he perfected breaks down under severe weather conditions and he therefore turned to an electrolytic process.

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PUBLIC HEALTH

Cancer Increases As Other Diseases Decrease

INCREASE in cancer is real and is due to two factors. In the first place, more people are escaping the hazards of youthful diseases and are living to the age at which cancer attacks. Second, and even more important, more of these people who live to the so-called cancer age are being saved from dying of other diseases, such as pneumonia, which formerly took a large toll at cancer age.

These conclusions, based on a study of Canadian vital statistics, were reached by Dr. Madge Thurlow Macklin, of the University of Western Ontario Medical School, at London, Ont. They were made public in the *American Journal of Cancer*.

Dr. Macklin compared death rates from cancer and from all causes in Canada at various age levels since 1901. She found that as public health measures decreased the prevalence of preventable diseases like smallpox, yellow fever,

malaria, diphtheria, and tuberculosis, the age of the population changed. More people now live to be over 40 years than did in 1901. At the same time the cancer deaths increased, not only in the general population but in the older age groups.

"The cancer rate might justifiably be used as an index of the state of preventive medicine and sanitation in a country," she stated. "Those with good public health organizations have a high cancer rate; those with a low cancer rate show poor public health facilities.

"Not only does preventive medicine bring more people to the cancer age, but it keeps them from dying of preventable causes after they get there, so that it is inevitable that the death rate from some few diseases, not preventable at present, will mount," she explained.

That Dr. Macklin is not unduly discouraged by her findings is evident from a concluding sentence, the philosophy of which should prevent people in general from taking a too gloomy view of the situation.

"We must all die of something," she pointed out, "and it is inevitable, as we eliminate one cause of death after another, that we increase the death rate from the causes that remain, for while we may increase the length of life, we do not decrease the certainty of death."

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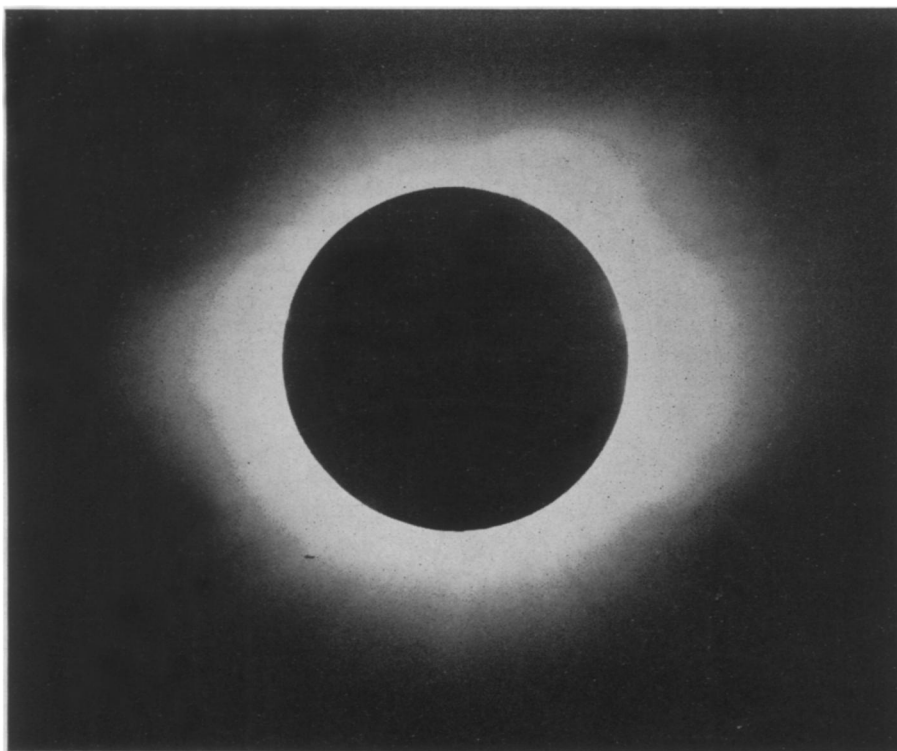
BOTANY

Autumn Brings Nobility Even to Cornfield Weeds

See Front Cover

AUTUMN is the time of the Truce of God. Even as a beggar may assume a certain dignity when he is about to die, so the commonest weeds often take on beauty when all things pause to make last salute to the retreating sun, before the *hora novissima* of the first heavy snowfall. For the cover picture of this issue of the SCIENCE NEWS LETTER, Cornelia Clarke has made a camera study of four seed-heads of the common velvet-leaf, *Abutilon theophrasti*, that has most sympathetically captured something of its air of a Villon repentant.

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SOUVENIR OF THE ECLIPSE

Many astronomers sought in vain at the Aug. 31, 1932 total eclipse of the sun for a likeness of the phenomenon so well reproduced here. This picture was taken at Fryeburg, Me., by Dr. Heber D. Curtis, director of the Observatory of the University of Michigan, Ann Arbor, Mich. Dr. Curtis used a camera of 40-foot focal length and exposed the film for 34 seconds.