NATURE RAMBLINGS by Frank Thone

BOTANY

Grapefruit

POPULAR botany has been recruited to the aid of political controversy by that warrior, still vigorous if no longer exactly happy, who some time ago brought popular zoology into the same arena, mixed and packed into the skin of a "boloney." Having heaved his heavy sausage with telling effect, Al Smith has now tried his marksmanship with a grapefruit.

It is as well, perhaps, that the honorary degrees conferred by various universities upon this eminent Democrat have been in law and the letters; for if he had received a degree of Doctor of Science it might now be the embarrassing duty of botanists and horticulturists to point out the fact that in alluding to grapefruit as "half way between a lemon and an orange," Al got his botanical classification as thoroughly mixed as are the zoological contents of bologna.

Grapefruit, they would point out, is not at all half way between lemon and orange, in the classifications of scholars who have paid careful attention to the taxonomy of the genus *Citrus.* Although they are not in complete agreement as to its exact position on the citrus family tree, botanists do concur in placing it quite close to the orange and rather farther from the lemon. Thus, Dr. Walter D. Swingle of the U. S. Department of Agriculture, writing for Bailey's Standard Cyclopedia of Horticulture, lists *Citrus grandis,* which is the grapefruit, between *C. aurantifolia,* the lime, and *C. aurantium,* the Seville orange. An equally well-versed botanist, Prof. Wilfred W. Robbins of the University of California, classifies grapefruit half way between the Seville orange and *C. nobilis,* the species that includes mandarin orange and tangerine.

It is to be particularly noted that no botanist considers grapefruit to be a hybrid between lemon and orange, a widely held popular notion which possibly Dr. Smith holds, though he does not specifically say so. Grapefruit is a "good" species—by which botanists mean a species distinct from its neighbors, and no hybrid. Like all the rest of the genus *Citrus,* it came originally from southeastern Asia—tropical and subtropical China, and the Malayan region. In its present perfection, however, it was developed practically altogether in Florida, whence its cultivation has spread to southern California, Arizona, Texas and other southern and southwestern states.

If Dr. Smith should desire some hybrid citrus fruits for political bombarding purposes, he might be referred to the tangelo, which is a cross between tangerine and grapefruit, or the limequat, a hybrid of lime and kumquat, or the citrange, which had for parents the common orange and the hardy three-leaved orange. All of these interesting fruits originated on American soil by the blending of separate immigrant strains—therein resembling the "typical" American citizen of the present day, of whom an eminent example may be found in Alfred E. Smith himself.

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Swedish museums have evolved a system of artificial lighting for exhibit halls, so that pictures and other objects are seen as if in clear daylight.

A German firm has introduced a non-shatter glass for automobiles and goggles, which is said not to interfere with vision nor to lose cohesiveness by accidents.

ASTRONOMY

Electric Eye May Show That Ours is Just Ordinary Galaxy

Photo-Electric Amplifier on 100-Inch Telescope Detects Stars and Nebulae Lost to Photographs in "Sky Shine"

THE PART of the universe in which we live will probably turn out to be "just another galaxy."

Dr. Joel Stebbins, director of the University of Wisconsin's Washburn Observatory, predicted in a recent lecture at the Carnegie Institution of Washington that new photoelectric measurements of the size of nebulae and the effect of dark, obscuring matter in interstellar space will greatly reduce astronomical estimates of the size of the Milky Way galaxy of stars in which our sun is a minor star and the earth a speck of dust.

Our galaxy has heretofore been considered much larger than other such systems which we see as spiral nebulae, but an astronomical "electric eye" perfected by Dr. Albert E. Whitford of the University of Wisconsin and used by Drs. Stebbins and Whitford last summer on the Mt. Wilson 100-inch telescope has furnished evidence that man does not live in an unusually large collection of stars after all.

The existence of an extensive layer of dark, obscuring material near the central plane of the Milky Way was confirmed last year by Dr. Stebbins. This non-luminous gas or dust fills up large spaces between the stars. It not only obscures but it reddens the light of distant heavenly objects seen through it, just as the sun looks red at sunset because it is seen through a greater amount of air. This means that the stars are actually brighter than they appear and they are therefore closer to us than has previously been estimated, making the galaxy smaller.

The photo-electric amplifier attached to a giant telescope will detect faint stars and nebulae which can not be photographed because they are lost in the "sky shine" or the diffuse light of the earth's own atmosphere.

The known diameter of the famous Andromeda nebula has been more than doubled, Dr. Stebbins reported, and its extension has been traced out to where the luminosity is only one per cent. of the general surface brightness of the sky.

In the experiments with the improved "electric eye" attached to the Carnegie Institution world's largest telescope on Mt. Wilson, Calif., Dr. Stebbins, who