

objects, and is located in the constellation of Virgo, the Virgin, which is directly south about nine o'clock in evenings toward the end of May.

While novae, or "new stars", which, from previous invisibility or obscurity, suddenly become more brilliant, are not especially rare, they generally appear in the Milky Way. As our system of stars, or "galaxy", is approximately the shape of a grindstone, with the sun and its accompanying planets located near the center, when we look in the direction of the grindstone's diameter we see a great mass of stars which form the Milky Way. Novae which appear in the Milky Way, therefore, are in the same system of stars of which the sun is a part.

The spiral nebulae, of which many thousands are soon in all parts of the sky, except in the region of the Milky Way, where the thick mass of stars obscures them, have been found to be other galaxies, or "universes", similar to ours, but outside its limits, by Dr. Edwin P. Hubble of the Mt. Wilson Observatory in California. In a spiral nebula in the constellation of Andromeda, Dr. Hubble has found more than fifty such novae by studying photographs made with the 100 inch telescope at Mt. Wilson. By comparing the average brightness of these novae with the average of those which appear in the Milky Way, he has determined the distance of the Andromeda nebula, which is about a million light years. A light year is about six trillion miles - the distance that a beam of light, which travels fast enough to go from Boston to San Francisco in a seventy-fifth of a second, will travel in a year.

According to the Harvard College Observatory, no new stars have ever been observed before in Messier 61, though they have been seen in a few other spirals. The brightness of the one discovered at Heidelberg, however, is much fainter than the average of those which have been discovered in the Milky Way, so that it is probably as distant as the Andromeda nebula. The outburst of the star, therefore, must have taken place at least a million years ago, though the news of it, borne on the wings of light, has just reached the earth, and since it could be seen at such a vast distance, it must have really been exceedingly bright.

NEW PLACE FOR ATTACHING TAXI METER WINS IN TEST

A new method of attaching a taximeter to a taxicab and how it proved satisfactory in a seven months' test was described by Capt. George F. Austin, sealer of weights and measures of Detroit, at a recent meeting of the National Conference of Weights and Measures.

By connecting the taximeter to the transmission drive shaft of a cab instead of the usual attachment at the front wheel, Detroit taxicab companies have saved hundreds of dollars in the past six months, Mr. Austin told the conference.

The usual objection to this rear wheel type of attachment, he explained, has been that on slippery or snowy streets the rear wheels of a car are apt to spin, and the passenger would be required to pay for the imaginary distance covered by the slipping wheels. It was shown, however, that a wheel would have to slip what would amount to 422 complete revolutions before the slippage would register a ten cent charge on the taxi meter, according to Detroit taxi rates.

There have been no complaints of overcharging since the new method was tried in Detroit, Mr. Austin said, although the streets of the city were icy for almost three months of the winter.

EGGS BY THE POUND POPULAR, SAYS OREGON WEIGHTS EXPERT

A hen's life is just one thing after another. Take Oregon now. It isn't enough for a hen in Oregon to turn out her quota of eggs per year, but she has to lay eggs weighing at least one and five-sixths of an ounce, if she wants to come up to the standard set in the recent state egg law.

All because Oregon dealers are rapidly abandoning the old American tradition of selling eggs by the dozen and are selling eggs by the pound.

How this innovation is working in the state and how it is becoming popular - with the dealers if not with the hens - was described at the recent meeting of the National Conference of Weights and Measures, by William A. Dalziel, deputy state sealer of weights and measures of Oregon.

Mr. Dalziel exhibited some of the types of weighing devices which have come into use for weighing eggs to determine their grade. Some of the devices being used are not accurate, he declared. He urged that, since the practice of selling eggs by weight is spreading atheadily, the devices used for grading them should be standardized and placed under the weights and measures laws.

NEW STRUCTURAL MATERIALS TO MAKE AIRCRAFT SAFER

Structural material, andnot engines or machine design, is the big problem today in aircraft development. Such is the experience of J. H. Kindelberger, engineer in charge of United States mail and military airplane construction in Santa Monica, Calif.

The imminent failure of the spruce lumber supply normally available from Oregon and Washington means that the all-metal plane is now the only real prospect of the future. Strangely, no material has yet been found, even in the domain of heat-treated steel and light alloys, which is equivalent, pound for pound, to straight-grained clear spruce for the main skeletal support of an airplane. Millions of feet of spruce in fact the major stocks of the northwest mills, have recently been rejected, however, by airplane lumber scouts. The few thousand feet of lumber deemed suitable for the work will be utterly inadequate in the face of the extensive development of the air service now in prospect. Thorough and most extensive research is now progressing with alloys of aluminum, copper and manganese.

Sheet metal stampings and seamless tubes of aluminum alloys are proving successful for cross braces and minor support members, also for flooring and sheathing of various sorts. Castings, heretofore considered unsafe under the strain of air service, are being made of more ductile metal, and will be available.