Urey Sees Plenty

"IN A GENERATION or two men will learn to live successfully with the new abundance that this century has produced," Dr. Harold C. Urey, Nobelist of the Columbia University, said in his message.

"In fact, when men in all walks of life learn that plenty is available for all in this modern world, and learn this so thoroughly that it is part of the background of their thoughts, these wars and uncertainties of life will disappear and the dreams of scientists of good for all will become reality."

Predicts Social Laws

"STRIFE and calamity are the bitter fruit of ignorance, success and achievement the reward of knowledge," Dr. Frank B. Jewett, president of the National Academy of Sciences, declared. "Mankind in the aggregate is, I suggest, ruled by laws or principles of behavior as immutable as those which guide the performance of the molecules of air he breathes. To be sure, the laws of social behavior have not proved as easy to discern as have those of the material world. Newton, single-handed, was able to envisage and enunciate clearly the law which guides the planets in their courses. Faraday and Maxwell drew a correspondingly clear picture of the domain of electrical phenomena. But the world has still to rear its social Newtons and its political Faradays and Maxwells. Indeed, the task is so complex that one wonders whether these social and political discoverers, when found, may not prove to be groups of able investigators who have banded together to secure the increased power of carefully focussed endeavor—not individual human beings."

World State or Chaos

"AIMLESSNESS, concealed behind rusty slogans, characterizes so much of our current social policy that science and the activities of scientific men are largely turned from world problems to the immediate utilities," Dr. Harlow Shapley, Director of the Harvard College Observatory, declared. "The goals are nearby and not inspiring.

"The sooner it is commonly realized that either a world state or chaos and recession lies ahead, the sooner we can shape a program for scientists that appears constructive and is appropriately dignified. Until then we are merely skilled mechanics with our eyes on the time clock.

"The blueprinting is, of course, not for scientists alone, and certainly it cannot be left to diplomats assisted by short-sighted economists. The draughtsmen must be advised by anthropologists, social psychologists, men who know the religions of people, as well as the more obvious geographers, agriculturists, and engineers. An aim must be the end of aimlessness.

"Although they must be tempered by expediency, the blueprints should recognize the present small size of the planet, the futility of presumption of racial superiorities, the futility of striving for restoration of a previous social order, the fact that possibly some good points for the adjusted world order can be obtained from the social philosophies of the totalitarian states, and they should recognize especially that if we strive to model the future on the Anglo-American present we are just setting up another great world sorrow and are not going out to meet the coming world state in the frank and intelligent manner that should become the scientific man."

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ASTRONOMY

Comet Surprises Astronomers By Increase in Brightness

Jump From Eighteenth Magnitude to Thirteenth In Few Weeks Causes It To Be Mistaken for New One

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THE ASTONISHING comet found in 1927 by Drs. A. Schwassmann and A. A. Wachmann, of the Hamburg Observatory, Bergedorf, Germany, has again attracted the attention of astronomers by its unaccountable behavior. It is the first of three periodic comets found by the same pair of discoverers, and is, therefore, called the first Schwassmann-Wachmann comet.

The orbit is unusual because it is more nearly circular than that of any other comet, and because it lies completely between the orbits of Jupiter and Saturn. The comet never comes within half a billion miles of the sun; and it is apparently tailless. Observed every year since its discovery, its orbit is well determined and its position in the sky can be predicted closely for several years ahead. But its sudden changes in form and in brightness are quite unpredictable, as well as mysterious.

On August 29 of this year Dr. G. Neujmin, of the Simeis Observatory, in the Crimea, discovered a comet of the 13th magnitude. It was the second discovered by him in little more than a month, despite his location so near the battle lines. The telegram announcing his discovery was not received in this country until 12 days later.

Soon it was noticed that the positions and motion of the new comet were those predicted for the first Schwassman-Wachmann comet, which Prof. G. Van Biesbroeck, of the Yerkes Observatory, had observed, only a few weeks before, at the 18th magnitude! In this time the distance of the comet from the sun and earth had changed but little, so that this hundred-fold increase in brightness represented a real change in the comet itself.

By September 15 the comet had faded at least two magnitudes, but a photograph taken three days later at the Oak Ridge station of Harvard Observatory showed that it had brightened to the 11th magnitude! In this short interval its brightness had, therefore, increased at least thirty-fold, and its appearance had changed markedly. When faint it appeared as a nebulous patch, but after it had brightened it appeared almost star-like.

Such outbursts have occurred several times before. The original discovery in 1927 occurred during one of them. In 1931 while looking over old photographs Dr. K. Reinmuth found images of a comet on four plates taken in 1902 at the Königstuhl Observatory, Heidelberg, Germany. These were later shown to be images of the first Schwassman-Wachmann comet. Since 1927 perhaps a dozen outbursts have been observed. It is probable that several more occurred during the times when the comet was not being watched. The cause of these outbursts is not known.

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