

tion bands which have not yet been interpreted.

Astronomers would like to know of what the solid parts of the planets are composed. But the heavy clouds which cover them prevent them from seeing. The clouds themselves provide a mystery because they give no sign of their structure. Even the rings of Saturn defy us by reflecting the sunlight exactly as it comes. Unless a substance absorbs some of the light which falls on it, there is no way of knowing what it is.

The researches of Drs. Adams and Dunham help tell of climatic conditions on the planets, of temperature and density distribution, as well as chemical composition of the atmosphere. So far there is no reason to assert that the other planets vary greatly from the earth in the elements they contain. Which elements are found most readily in the atmosphere of a planet is decided by how big it was at its beginning, how hot, how far from the sun and how far from us it is now. Such accidents in its history probably determine whether it too supports some sort of life.

*Science News Letter, February 18, 1933*

**SEISMOLOGY**

**Quake Reported Itself Seven Weeks Ahead of News**

CHINA'S Christmas earthquake disaster, whose deaths in Kansu Province were recently variously reported by cable as numbering from a few hundred to 70,000 sent its own reports by much faster methods, and they were read and correctly interpreted by scientists on the day of the catastrophe itself.

Within a few hours after the earthquake occurred, eight seismological stations in widely separated parts of the world wired and radioed the facts of their instrumental records to Science Service. Scientists of the U. S. Coast and Geodetic Survey interpreted the data, and stated that they indicated a "very severe earthquake that was probably extremely destructive to life and property" in the interior of China. The latitude and longitude as thus calculated correspond exactly with the locations now being reported by cable.

This is the second time that a disastrous earthquake in that same region has sent its own report, via the sensitive instrument in seismological observatories, weeks ahead of the delayed cable news. On May 22, 1927, an even greater catastrophe, in which a hundred

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thousand Chinese perished, occurred in Kansu, and within eighteen hours its location had been determined and the statement made that loss of life and property would probably be very heavy. At the end of July a missionary priest finally found his way through a ruined and bandit-infested region to a telegraph wire and sent the first verbal confirmation of the scientists' prediction.

Similar "beats" have been scored by scientists and seismographs over reporters and telegraphs in several other notable earthquakes during recent years. Data for these reports are gathered by Science Service and interpreted by the U. S. Coast and Geodetic Survey and the Jesuit Seismological Association, acting in cooperation with many seismological observatories in universities and other institutions in the United States and foreign countries.

*Science News Letter, February 18, 1933*

One of the most impressive looking agricultural implements is a combination corn picking and husking machine which handles two rows of corn at once, and does the work of a large force of men with only two or three attendants.

With the decline in quality of the iron ore of Great Lakes region, one engineer foresees that it will be necessary to import high grade iron ore from South America to mix with the local product and thus preserve the industry of the Lake states.

The National Conference on Merchant Marine was told that less than ten per cent. of the American merchant fleet is new, that is, built since 1922, whereas the fleets of Germany, Norway, Great Britain, Holland, and Sweden are more than 50 per cent. modern and new.

ECONOMICS

## Industrial Survey Necessary Prelude to Technologic Rule

This is the fourth article of a series presented to illuminate the backgrounds and objectives of the movement that has found expression in the discussion of Technocracy. The material is given as information and news, not as our opinion or with our endorsement. The next article will give Professor Soddy's views on money, banks and currency.

**T**HE ORGANIZATION of a suitable self-selected group of economists and technicians.

An inquiry into available ways, means and personnel.

A working-out of a common understanding and solidarity of sentiment between technicians and labor.

These are three essential practical steps listed by Thorstein Veblen when in 1919 he visualized a "soviet of technicians" that might rule the nation.

The organization of Technocracy in New York that has captured public imagination is believed by some to be an actual attempt to work out the first two of these steps.

In addition to the self-appointed organization of technicians, their charting of the nation's needs in industry, and the marshalling of technically trained men and women to operate the wheels of civilization, Veblen saw the need of an extensive campaign of inquiry and publicity that would bring to the underlying population a reasonable understanding of what it is all about. An-

other prerequisite of any overturn of the established order of absentee ownership is the active adherence of the trained workmen in transportation and the mechanical industries.

How would the technicians take control, once they are ready to act? Veblen suggested "a conscientious withdrawal of efficiency, that is to say the general strike, to include so much of the country's staff of technicians as will suffice to incapacitate the industrial system at large by their withdrawal, for such time as may be required to enforce their argument."

"By themselves alone," he wrote, "the technicians can, in a few weeks, effectually incapacitate the country's productive industry sufficiently for the purpose. No one who will dispassionately consider the technical character of this industrial system will fail to recognize that fact. But so long as they have not, at least, the tolerant consent of the population at large, backed by the aggressive support of the trained working force engaged in transportation and in the greater primary industries, they will be substantially helpless to set up a practicable working organization on the new footing; which is the same as saying that they will in that case accomplish nothing more to the purpose than a transient period of hardship and dissension."

### Wealth From Energy and Diligence

The production of wealth, as distinct from debt, demands a continuous supply of fresh energy and continuous human diligence, nowadays, rather than physical labor.

This idea was put forth by Prof. Frederick Soddy, eminent British chemist and Nobel prizeman, in his 1926 book, "Wealth, Virtual Wealth and Debt."

Prof. Soddy is called a prophet of Technocracy. The Technocracy movement has emphasized the basic nature of energy in the machine age, but it has not accented the human diligence factors to which Prof. Soddy gives equal value.

Prof. Soddy in recent years has applied scientific method to economics. In the same spirit that he conducted

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