could build up an agriculture that would be not only profitable but also permanent and increasingly productive.

E. Davenport

SCIENTIFIC EVENTS

ATOMIC ENERGY

At the second day of the James Watt centenary commemoration at Birmingham those present heard an address by Sir Oliver Lodge foreshadowing the possible employment of atomic energy.

According to the report in the London *Times* Sir Oliver Lodge said that, in view of the fact that the sources of molecular energy are beginning to show signs of exhaustion, he ventured to assume that if James Watt were living to-day he would be directing his attention to discovering whether there are other stores of energy at present almost unsuspected. The fact was that contained in the properties of matter there was an immense source of energy so far inaccessible, but which he saw no reason why the progress of discovery should not make available. He referred to atomic energy which, if it could be utilized on an extensive scale, would, he believed, greatly ameliorate the conditions of factory life. There would be no smoke due to imperfect combustion and no dirt due to the transit of coal or ashes, while the power would be very compact and clean. Possibly there might occasionally be explosions due to the liberation of power more quickly than it was wanted, but in general he presumed that the conditions of utilization would be good.

Sir Oliver explained that the secret of this power began to be given away when radio-activity was discovered, and said that at present we were hardly at the beginning of its utilization. The discovery of radium, which soon followed, excited universal interest and aroused great surprise, because radium appeared to give off energy continually without being consumed. The truth was that it did disappear as it gave off its energy, but the disappearance was so slow and the energy given off so remarkable that it was not surprising that one was noticed before the other. The energy of radium, however, was not under control, and it went on emitting energy at its own proper rate without regard to accidental circumstances. What happened was that every now and then a particle was projected. The energy stored in an atom was something enormous, and if we could make the atoms fly off when we wanted there would be available a source of energy which would put everything else into the background. This energy was contained in all forms of mater and was not confined to radio-active substances. If a stimulus could be found the utilization of this source of energy would be possible. We appeared to be on the verge of utilizing a minute fraction of it, and it was this energy which had made wireless telephony possible.

STATISTICS OF THE NATURAL GAS INDUSTRY

A report on "Natural Gas and Natural Gasoline in 1917" by John D. Northrop, just published by the Geological Survey, gives statistics of the production and consumption of natural gas and sketches the condition of the industry in 25 states. It gives also statistics concerning gasoline made from natural gas in that year.

More than 2,100 cities and towns in the United States are supplied with natural gas, which is furnished to domestic consumers at rates that should arouse the envy of those consumers of artificial gas who have to pay about a dollar a thousand cubic feet. The average price per thousand cubic feet charged to consumers of natural gas in the United States in 1917 was about 30 cents. The average price charged to manufacturers was less than 12 cents.

Most of the towns and cities supplied with natural gas are in New York Pennsylvania, Ohio, West Virginia, Kansas, Oklahoma and California. In Ohio 872,000 domestic consumers were supplied in 1917, In Pennsylvania 480,000, in California 239,000, in Kansas 188,000, in New York 164,000, in West Virginia 129,000, and in Oklahoma 95,000. The industrial consumers, by whom the gas is used for manufactures or for generating power, use twice as much gas as the domestic users.