

PHYSICS

Professor Albert Einstein Announces a New Theory

Seeks to Weld Relativity and Quantum Theories Into Single, More Powerful Tool for Scientific Research

PROF. Albert Einstein, Nobel prize winning scientist of the Institute for Advanced Study, has just announced a new theory which should profoundly affect the whole structure of physical science.

Continuing his world-recognized role as scientific "coordinator," Prof. Einstein offers the first mathematical "signposts" which may point the way to a welding of his own famous relativity theory and the new quantum theory into a single, more powerful tool for science.

Both relativity theory and quantum theory have been of such fundamental importance that the men who devised them have won the highest award in science—the Nobel prize.

Here are the outstanding, startling concepts in Prof. Einstein's new and yet-unnamed theory:

1. Space is pictured as two sheets.
2. Particles in space are envisioned as "bridges" linking the two sheets.
3. The most elementary particle in nature is one without gravitating mass, i. e., without weight.
4. Electricity and mass are not related but appear as independent constants in the equations.

In a report to the *Physical Review*, (July) official publication of the American Physical Society, Prof. Einstein, with Dr. N. Rosen, as collaborator, describes how his own general relativity theory accounts for the large-scale happenings of nature but fails when attempting to explain the atomic structure of matter.

Both Theories Incomplete

At the same time, he adds, quantum theory, while highly successful in describing the interactions of atoms and their still smaller parts, fails to explain phenomena in the field of relativity.

At present, depending on the job at hand, science chooses either one or the other theory as a "tool." In analogy science is now working like a carpenter who uses a saw to cut wood and a hammer to drive nails.

Prof. Einstein, in trying to combine

the two theories, would like to have science (as a carpenter) have one tool which both cuts wood and drives nails.

Sufficiently complex in its mathematical details to tax the ingenuity of the legendary twelve men who were originally said to understand Einstein, the new theory of the distinguished professor pictures space as represented by two sheets. The presence of an elementary particle without electrical charge in this space is represented as a "bridge" connecting the two sheets.

Aids Understanding

With the help of this "sheet-space and bridge" picture, "one is able to understand the atomistic character of matter as well as the fact that there can be no particle of negative mass," Prof. Einstein reports.

An important and unusual outcome of the new theory is that the "most

natural electrical particle in the theory is one without gravitating mass," to use Prof. Einstein's own words.

A particle without gravitating mass would be one which weighs nothing. This state of zero mass is represented by one "bridge" between the two sheets of space. (Turn to Page 20)

ENGINEERING

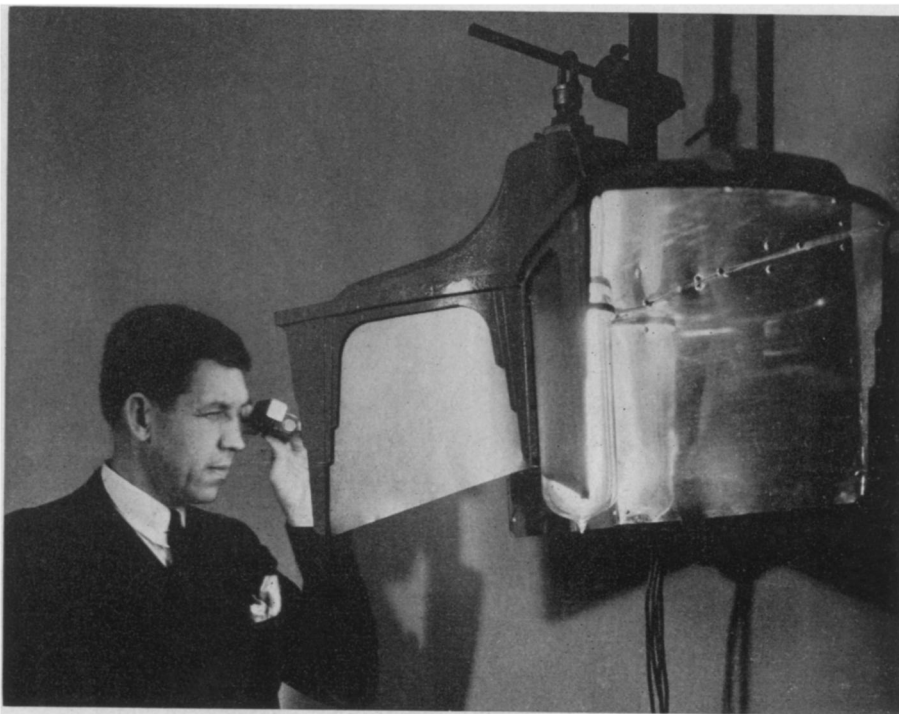
New "Butterfly" Lamp Reflectors Stop Glare

THE annoying gleam of street lights which enters the bedroom windows of city dwellers and interferes with their sleep should be a thing of the past if the new type of "Butterfly" reflectors invented by engineers of the Westinghouse Electric and Manufacturing Company are generally adopted.

Designed of polished aluminum in a shape resembling a great metallic butterfly, the new type reflector is being used in connection with sodium lighting for highways.

Because of the special shape, all the light is reflected downward and none laterally to bother sleepers along the roadside. Moreover, the reflectors are an aid to motorists because road glare from the overhead lamps is greatly reduced.

Science News Letter, July 13, 1935



"BUTTERFLY LIGHTS"

Samuel G. Hibben, Westinghouse lighting expert, is checking the wavelength of light from a sodium vapor lamp as it operates in one of the new "Butterfly" fixtures which throws the light downward, preventing glare in windows and motorists' eyes.