

PHYSICS-ASTRONOMY

Attic Genius Wins Einstein's Approval for Relativity Test

Great Mathematician Helps Obscure Czechoslovakian To Present Ideas on Astronomical Test of Theory

ANOTHER tale of the human, kindly side of Prof. Albert Einstein can now be told; the story of how he aided an obscure Czechoslovakian dishwasher to present some original astronomical ideas to the world of science when all other doors were shut against him.

Press association wires and the leading metropolitan newspapers recently gave prominence to the brief report published by Professor Einstein in the magazine *Science* (Dec. 4), official publication of the American Association for the Advancement of Science.

Dr. Einstein's paper was entitled "Lens-like Action of a Star by the Deviation of Light in the Gravitational Field," and he credited R. W. Mandl with first presenting to him the idea behind the technical report. For want of information these stories mentioned Mandl as a young scientist.

Actually Mandl is no scientist except in the attic genius sense of the word and his bald head and 42 years definitely put him beyond the "young" stage. And for months, in Washington and in New York, Mandl has lived a precarious existence as dishwasher in third-rate restaurants and "coffee pots." He now tends a furnace for his room rent in a Corona, L. I., home.

Late last spring Dishwasher Mandl, whose hobby is drawing geometric designs on eggshells, walked into the offices of Science Service in the building of the National Academy of Sciences in Washington with a bundle of pieces of paper, covered with mathematical symbols, clutched in his hand.

Interpreter

His bald head gleamed in the sunlight and his baggy blue suit hung in folds. But his eyes shone as he presented himself, clicked his heels in continental style and began a hurried speech in broken English with relapses into his native tongue. Only the presence of a friend acting as semi-interpreter disclosed that Rudi Mandl had something more to offer than the "crank" type of

visitor to the offices of a newspaper or syndicate.

Yes, he did have something! He would show the astronomers a new test for the Einstein theory of relativity that was so simple that any person with a six-inch telescope could check it himself.

"You see," he said, "the light from a distant star will be bent as it passes the nearer star and the effect will be a great brightening that anyone can see with a small telescope." And he talked on and on excitedly for some minutes.

Would Science Service publish his discovery? The answer was at first no, for all manner of cranks present themselves monthly with every kind of fantastic idea. But would he like to have his expenses paid on a trip to Princeton to enable him to see Professor Einstein at the Institute for Advanced Study?

Clutching his papers and the money, he happily rushed off and went to Princeton. Probably no one will ever know exactly what took place at the meeting of the dishwasher and the father of relativity. They talked for some hours in German and probably Mandl, with this added fluency, presented his case better, for on his return he happily appeared and said that Professor Einstein would himself check his calculations and offer them for publication.

Weeks and months went by and too much daydreaming over sinks full of dishes in Washington restaurants made it expedient that Mandl transfer his vocation and avocations to the larger and newer fields of New York City. Finally a letter came to Science Service asking if and where Professor Einstein had published his calculations. And if not, why not?

Prepared for Publication

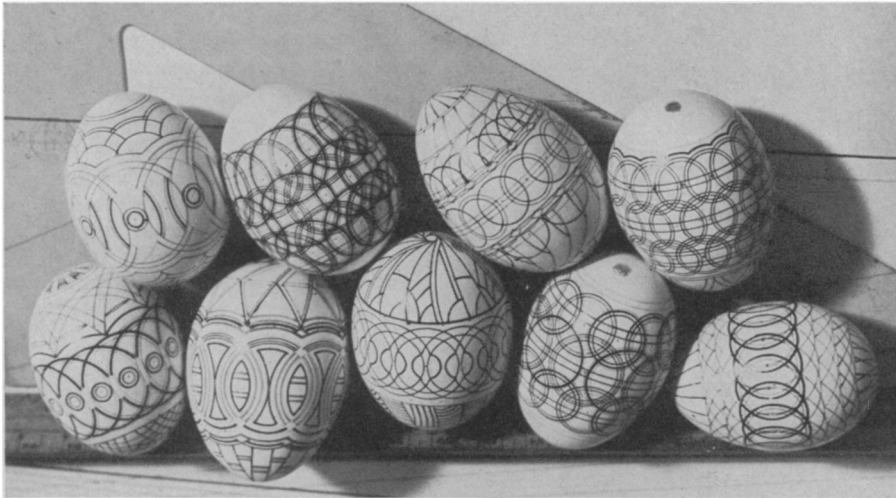
Acting again as intermediary, Science Service sent a letter to Professor Einstein asking about the matter. The courteous reply in German stated that the Mandl idea was interesting and would be ready for publication shortly.

The report in *Science* for Dec. 4, 1936, in which Professor Einstein begins



PROPOSES EINSTEIN TEST

Rudi W. Mandl, as he washed dishes in a restaurant, worked out an astronomical test of the relativity theory that won the approval of Professor Einstein and was published by him.



A HOBBY

Eggshells covered with geometric designs provide Mr. Mandl with an absorbing hobby and a means of livelihood.

with the specific statement, "Some time ago, R. W. Mandl paid me a visit and asked me to publish the results of a little calculation which I made at his request. This note complies with his wish," is the fulfillment of that promise.

It would be fine to be able to state that the theory and preliminary calculation of Rudi Mandl has upset or made a revolutionary contribution to the famous theory of relativity, but a close check of the calculations by Professor Einstein shows that the supposed lens-like action of one star on the light of another star is a very brief phenomenon, lasting only a few seconds at the most; so fleeting that Professor Einstein doubts if it can ever be observed experimentally.

Of this Einstein says at the conclusion of his report:

"... there is no great chance of observing this phenomenon, even if the dazzling light from the nearer star is disregarded." But he goes on to say:

"This apparent amplification of q by the lens-like action of the star is a most curious effect, not so much for its becoming infinite, with vanishing x , but since with increasing distance D of the observer not only does it not decrease, but even increases proportionally to the square root of the distance."

Rudi Mandl, dishwasher extraordinary, may not have set the world of science on fire as he hoped when he originally walked into Science Service's offices, but at least he has discovered what even such a great scientist as Einstein calls a "most curious effect" and made an original contribution to scientific thought. That thought might have

been lost but for Professor Einstein's generosity.

A thumbnail biography of Rudi Mandl would include the following: Born 42 years ago in what is now Czechoslovakia . . . began education at Technologisches Gewerbe Museum of Vienna in 1911 . . . fought in Austrian army on eastern front . . . captured and sent to Siberia in 1915 . . . escaped 1918 . . . returned Vienna and graduated in 1919 as electrical engineer . . . left for South America but returned to Germany the next year to manufacture an electric iron he had invented . . . wiped out by German inflation of 1923 . . . came to America . . . for two years was New York Public Library's most voracious reader . . . worked as busboy and dishwasher on weekends to obtain bare essentials of existence.

Science News Letter, December 19, 1936

HYGIENE

Water Wagon Advised For Tropical Residents

IF YOU are going to live in the tropics, you will climb aboard the water wagon if you know what is good for you.

Here is the recipe for successful living in a tropical climate, as given by Dr. Cecil K. Drinker, Harvard physiologist: No alcohol; adequate sleep, simple food, plenty of water, plenty of salt in the diet, and daily exercise.

Two years is probably the longest safe period for a white man to live in

the tropics, according to Dr. Drinker, whose studies of the effects of heat and humidity on the human body are made the subject of editorial comment in the *Journal of the American Medical Association*. (Dec. 5.)

The health of a man from a temperate climate begins gradually to deteriorate when he goes to the tropics, and the effects of the heat and humidity upon his wife and children are even worse.

Physical and Mental Changes

A tall, thin person is best fitted for tropical life, according to Dr. Drinker, for his body has a maximum surface for heat loss in relation to body weight.

Some of the bodily changes that have been noted among white residents of the tropics are as follows: The basal metabolism changes. Fertility is reduced. The pulse rate decreases slightly. The breathing rate decreases, but the minute volume of air is somewhat higher. Often a slight alkalosis develops. Blood sugar is likely to be low; the nonprotein nitrogen increases; the total phosphorus in the blood is lowered. The red blood cells increase slightly; the white cells decrease.

Children, after the age of three years, tend to become weak and apathetic, Dr. Drinker states. By the time they are ten years old, they are poor in initiative and application.

In the case of adults, the will power often weakens, laziness follows and sometimes vicious habits gradually develop.

Science News Letter, December 19, 1936

TECHNOLOGY

Dr. Clarence J. West Is Awarded a Medal

DR. CLARENCE J. WEST, editor at the Institute of Paper Chemistry, Appleton, Wis., will be presented next February with the medal of the Technical Association of the Paper and Pulp Industry.

Awarded for the first time for work outside paper research or development, the medal recognizes Dr. West's service since 1920 as chairman of the Association's committee on abstracts and bibliography.

Dr. West is the former director of the Research Information Service of the National Research Council and editor of the seven-volume *International Critical Tables*, which give the physical and chemical constants of all known materials.

Science News Letter, December 19, 1936