

## PHYSICS

# Hardest Known Cosmic Rays Found in Iron Mountain

**N**EW penetrating cosmic rays, the "hardest" known, have been discovered by Dr. Axel Corlin of the Lund Observatory, Sweden, who has reported his researches to *Nature*.

He carried out his experiments in an iron mine in a mountain near Kiruna where the cosmic ray measuring apparatus could be placed in the mine's galleries so as to be shielded by known layers of the iron ore.

Cosmic rays that had considerable energy after having penetrated 160 meters (525 feet) of ore, which is equivalent in shielding to 800 meters (2620 feet) of water, were detected. They were "harder" than any previously found, with an absorption coefficient a tenth that of the hardest component of the intense cosmic rays measured by Prof. E. Regener of Stuttgart, Germany.

Dr. W. Kolhörster, another German physicist, however, has measured in the depths of a Stassfurt salt mine, cosmic rays of 700 to 800 meter maximum penetration that approach more closely in intensity those discovered by Dr. Corlin. About 200 meters (650 feet) of water is sufficient to eliminate most of the cosmic radiation.

To his surprise, Dr. Corlin found that the iron ore contained some radium, five hundredths (0.05) milligrams per ton. Dr. Corlin believes that this is the first time that radium has been found in iron ore. The radiations from the radium affected the measuring device but after allowing for the effect of the radium radiation there remained a residue effect which Dr. Corlin feels can only be accounted for by extremely penetrating fraction of cosmic rays.

*Science News Letter, February 3, 1934*

## EDUCATION

# Correspondence Course Mortality Found High

**T**HE AMBITIOUS boy who follows the advice in inspirational pleas to "secure advancement by taking a course in—" all too often meets with discouragement and failure because the course he chooses is not fitted to his needs or abilities. The mechanic wants to be a salesman, and the salesman wants to be an aviator.

In the course of a study of the vocational assets and liabilities of unemployed men during the depression investigators of the Employment Stabilization Research Institute of the University of Minnesota compiled data concerning the correspondence courses taken by these men and the results, if any, of their efforts.

One out of every ten of the men examined by the Institute in their survey had enrolled for correspondence courses of a vocational type. Some have been aided by them to better positions or to better accomplishment in the positions they held. But tales of failure and dis-

couragement are many and amazing.

The "mortality" of these students is extremely high. Forty per cent. dropped out before the end of the first year and two-thirds dropped within 15 months. Of those taking business courses, about a third gave up within six months. Only 6 per cent. indicated that they succeeded in completing their courses.

Only 28.6 per cent.—29 men out of a hundred—ever succeeded in obtaining a job in the occupation for which the course was to train them. And an even smaller proportion, 22 per cent., possessed the ability (as shown by tests) to do that kind of work, even had they been able to secure the job.

The difficulty is not necessarily with the correspondence course or with the student, Drs. Charles Bird and Donald G. Paterson, who reported the study, conclude. Rather it is with the pathetic fact that man's ambitions so far excel his ability—his vision so far exceeds the distance he can run.

"If correspondence schools would set

up personnel bureaus and avail themselves of measuring instruments whereby adult students could be guided to suitable courses, their courses of training would meet a sorely felt need in the field of adult education," is the conclusion of the investigators.

"Until they undertake this service, efforts of the hit-or-miss variety coupled with intensive advertising and sales campaigns must continue to brand most of these schools as merely profit-making institutions. And of more serious import, they are contributing to the formation of an unhappy and maladjusted citizenry."

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## ORNITHOLOGY

# Wingless Rooster Studied At Smithsonian Institution

**A** ROOSTER without wings is the strange freak of nature recently received by the Smithsonian Institution. It has been given quarters at the National Zoological Park, where it is being studied by Dr. Hurbert Friedmann.

Fowls without wings are hatched occasionally, but all hitherto reported have died while still young chicks. The present specimen, a Plymouth Rock, grew to healthy adulthood in the flock of Mrs. Olio Deering of Rose Hill, Ky., who sent it to the Smithsonian Institution. Its parents were normal birds.

The wingless rooster's behavior seems to be normal in most ways, but its abnormal structure does seem to handicap it. It is afraid to make jumps that would mean nothing to the ordinary chicken. Placed hungry on a table, with ample food strewn on the floor, it hesitates a long time before making the jump.

*Science News Letter, February 3, 1934*

## INSULIN AND DIABETES

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an address by

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4:30 p. m., Eastern Standard  
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