

RADIO

June 15, 4:15 p.m., E.S.T.
FISHING IN ALASKA—Frank T. Bell,
Commissioner of Fisheries.

In the Science Service series of radio discussions over the Columbia Broadcasting System.

to be, or to have been, normally adjusted and stable personalities. All the families are long lived and have good health histories.

At present these young prodigies are tall, healthy children ranging in age from five to fifteen—all of them normal mentally, physically and emotionally.

"We cannot predict the futures of these children," Dr. Zorbaugh said. "So far, they and their families have had

careful guidance. The children have all had unusually fortunate educational experiences. If, as they grow older they become unstable, we believe it will be due to the Clinic's inability to control the hazards of development to which such children are exposed. . . .

"If society showed the interest in its children of genius that it shows in its idiots, we might speak more confidently. We spend millions of dollars yearly, for research and education, on our feeble-minded.

"An equal amount invested in our gifted and talented children would yield an immeasurably rich return—in a deeper understanding of the nature of giftedness and talent, in the increased social productivity of the gifted elements of our human population."

Science News Letter, June 12, 1937

MEDICINE

New Human Disease Found; Resembles Rabbit Ailment

A NEW brain disease of man, which closely resembles a disease that attacks rabbits in many parts of America and Europe, was described by Drs. Abner Wolf and David Cowen of New York at the meeting of the American Neurological Association at Atlantic City.

The new disease has the imposing name of granulomatous encephalomyelitis. It is caused by a tiny egg-shaped organism which attacks the brain. The New York doctors reported a case of this disease in an infant born in New York City of American parents and dying at 4 weeks of age with widespread inflammation of the brain, spinal cord and retina of the eye. A similar case has been reported in an infant in Brazil and another in Czecho-Slovakia.

The condition of the infant's brain was much like that seen in rabbits afflicted with a brain disease due to a parasite called *Encephalitozoon cuniculi*, and the germ or organism found in the dead baby's brain was very similar to the one that causes the rabbit disease.

Insulin Shock Danger

Insulin shock, much heralded treatment for the widespread mental disease, schizophrenia, may itself produce a serious brain disease of another sort, with symptoms like paralysis agitans. Warning of this possibility was given by

Drs. Baldwin L. Keyes, Herbert Freed and Helena E. Riggs of Philadelphia.

Previous warnings on the use of insulin shock treatment for mental disease have had to do with the possibility of the patient dying before he could be given enough sugar to bring him out of the shock.

Serious insulin shock may and sometimes does cause serious brain changes, the Philadelphia doctors asserted. These may result in after-effects like those in some cases of epidemic encephalitis, so-called sleepy sickness. The condition, with its rigid muscles, immobile facial expression, tremors and cramps, is like paralysis agitans.

A case of possible brain hemorrhage following insulin shock, in which the patient was temporarily paralyzed on one side, was also reported by the Philadelphia doctors.

X-Ray Treatment of Brain

A definite limit to X-ray dosage which can be used safely and effectively in treating brain cancer was set up by Drs. Percival Bailey, J. E. A. O'Connell and A. Brunschwig of Chicago.

"Any result which cannot be obtained by a depth-dose of 4,500 roentgen units," they state, "will not be obtained by higher dosage."

Further dosage, they said, may cause serious brain damage.

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GENERAL SCIENCE

Fear World Faces Disaster; Scientists Urged To Rally

SCIENCE is so universally useful that it is nurtured and praised by capitalist and communist, dictator-dominated states and democracies, peace enthusiast and war lord.

Because research and science are used for unsocial purposes so often, the ideal of a "brotherhood of scientists" has fallen into a general decline. In certain sections of the world where thought and truth are strait-jacketed, scientists can not participate in free interchange of opinion.

In this precarious state of the world's intellectual life, the rising tide of concern over the social consequences of science's applications is a hopeful sign. Latest of these efforts to orient and kindle the scientific spirit is the suggestion that the International Council of Scientific Unions take the lead in co-ordinating what has been proposed.

The task is as difficult as it is large. It requires bravery of the first rank and keen appreciation of the complex factors that intertwine governmental and industrial systems. It requires a scientific approach that admits mistake even though that new set of facts may dethrone righteous emotion.

Without the organization of labor and



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unclothed with the financial power of capital, the scientific worker and investigator will often find himself likely to lose job and prestige if he "knows the truth" and lets others know that he knows it. In countries nearer the breaking point than ours, he may find himself in jail or worse.

Scientists the world over are aroused with the fear that scientific progress may

be losing the race with social instability. They see disease, poverty and war shackling the human mind and spirit. They have a vision of what the scientific spirit and human understanding could bring to the world. Scientists are so few numerically, yet given a rallying point they might be the leaven that will cause the world to rise from its social despondency.

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PHYSICS

Wallpaper Patterns Linked To Atoms in Study of Design

LYING abed, sick or wakeful, in a room papered in a prominent pattern may lead one to believe that the ways a wallpaper pattern can be varied are limitless.

Take it from those who know—not wallpaper manufacturers but crystallographers of the Massachusetts Institute of Technology—that there are only 17 different ways in which the basic design can be repeated on the paper.

This science of design is a sort of by-product of a more intricate task, the study of crystal structure. Each crystalline compound in chemistry is a structure of atoms. The tiny crystals, whose atoms can be detected only by powerful instruments, can be thought of as three-dimensional wallpaper. In three dimensions, or space, patterns can be arranged in 230 different ways, as contrasted with the 17 of repeating a given motif on a plane or two-dimensional surface.

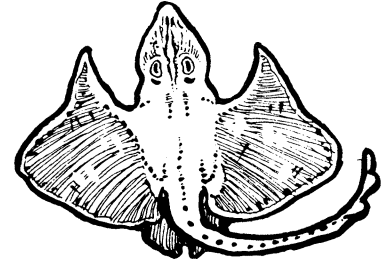
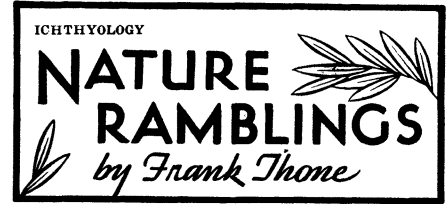
The more complex problem of crystal structure is important in understanding nature's or man-made chemical compounds so useful in medicine, industry,

and other fields. In these compounds the atoms composing them may be as close together as one ten-trillionth of an inch. Scientists studying photographs of X-rays diffracted by crystals, which reveal the patterns, must be able to measure to one five-hundredth of an inch on the photographic film.

The two-dimensional patterns are not confined to wallpaper. They may be found in neckties, dresses, tiling, textile weaves, prints on linoleum, carpets, etc. Professional designers and those who like to work out such puzzle problems just for the fun of it will be interested in studying the article about wallpaper and atoms that appears in the *Technology Review* (June 1937) written by Prof. M. J. Buerger and J. S. Lukesh.

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A nail driven into a tree four or five feet above ground will not "grow up" with the tree, but will remain at that height however tall the tree becomes.



Shark Curiosities

SHARKS have swum the world's waters for well over a third of a billion years—since Silurian geologic times. They have been a successful family from the start—numerous as individuals, prolific in the evolution of new species, aggressive, adaptable.

Sharks, like all other fishes, have numerous species in what might be called the standard fish form: streamlined body with its greatest diameter well forward of amidships, a flaring tail, moderate-sized fins. A form like trout or codfish or carp.

From that form, however, they vary in all sorts of ways. Just as the higher fishes have produced the long and snaky eel, so also there is an eel-shaped shark. It is an exceedingly rare fish, first found in Japanese waters and since discovered in a scattered few places in the warmer seas.

Then there are the flat-bottomed sharks, that habitually lie on the bottom like flounders, except that they are flattened in the opposite direction and lie on their bellies instead of their sides. Of such are all the skates and rays, including the vicious stingrays and the stingless but portentously huge devilfish or manta of the tropic seas.

One of the strangest of these is a creature that has the wide side-extensions of its body partly supported on a pair of arm-like extensions, so that they look almost like wide sleeves. With its pointed head projecting between them like a bishop's mitre, this shark so impressed an early French naturalist that he described it as "a sea monster in the robes of a bishop."

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