

## METALLURGY

## Book Holds All World Knows Of Cast Iron and Steel

ALL THE world's knowledge of unalloyed steel and cast iron, gleaned in 50 years of research by more than 1,000 scientists, is packed into the 1,200-page, two-volume monograph announced by the Engineering Foundation.

The Engineering Foundation is the research agency of the national engineering societies, working in cooperation with the steel, automobile, chemical and other industries. The monograph, just completed, was compiled by the Iron Alloys Committee of the Foundation and is a synthesis of the world's entire knowledge of the subject.

The steel industry alone, states the Foundation in its report, spends more than \$9,000,000 a year on research and has \$6,000,000 invested in research and testing laboratories and equipment.

*Science News Letter, June 19, 1937*

## PSYCHIATRY

## Children May Seek Death Because They Want Love

LITTLE children are not all joyous carefree sprites filled with life and the joy of living. For some who are hardly beyond infancy, this world has already become an unbearable place.

In Bellevue Hospital, New York, in a children's ward are little youngsters aged from a mere six years to 13 who have attempted suicide and are, in the formal words of the physicians, "preoccupied with death."

Child suicides seem to have had but a slender hold on life. The reasons given for death attempts often appear trivial to an adult. Perhaps it was a bad report card and a parent's hasty reproof afterward. Maybe just disappointment at being unable to attend the circus or a party. Why should such a silly little matter precipitate such tragic action, we ask.

Looking behind the precipitating action, the underlying cause of child suicides has been sought by Drs. Laretta Bender and Paul Schilder who have watched those children "preoccupied with death" at Bellevue's children's ward.

You will be surprised at the answer they have found.

Children attempt suicide because of spite. The child suicide wants to get even. Unconsciously, he may say to him-

self as so many children have said aloud, "You'll be sorry when I die!"

And that leads to another reason for child suicide—or rather the reason for the spite—urgent need for, and a feeling of lack of, love. Many of the children who go to Bellevue preoccupied with death are orphans. Some are unwanted children. Some feel that they are rejected because of physical disabilities.

Perhaps in their hearts these youngsters do not want to die. They may want only to try to kill themselves. They dream wistfully of hearts awakened at last to love and swift hands reached out to thwart them. To children, death is not irreversible; they may hope that death will serve to set their lives right again. For the orphans, these physicians suggest that the attempted suicide probably represents the desire to be again with the parents.

This paradoxical finding—little children trying to kill themselves out of spite, a spite caused by need for love—may offer new aid in the understanding of adult suicides as well.

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## PHYSIOLOGY

## Safe Period Birth Control May Destroy Marriage

CONTENDING that the safe period method of birth control, "because of the prolonged periods of continence necessary," tends to "destroy spontaneity in marriage to the extent it forces sexual relations contrary to the normal physiologic tides of desire," the *Journal of the American Medical Association* (June 5) in a leading editorial states that this method of birth control is in this respect antisocial and likely to destroy rather than to promote marriage.

Research by Dr. Prentiss Willson, Washington, D. C., physician, shows that in using this method the average woman "must be continent for about 234 days in each year, as against 65 days necessary for the one who is using adequate modern contraceptive measures."

"Until such time as its limits can be much narrowed and its exact timing more accurately determined," the *Journal* says of the safe period method, "it can be considered legitimately only as a method accessory and complementary to ordinary methods of contraception. The 'safe period' then, used in that way, and also as a guide in the prevention or cure of sterility, is a valuable and practical addition to medical knowledge."

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# IN SCIENCE

## PSYCHIATRY

## Chemists Watch Riches Flow Back Into the Sea

JUST as a small boy might look at a candy counter, or a bank robber look at the nation's gold depository at Fort Knox and think, "Boy, there's over a billion dollars in there," so too are chemists of the Ethyl-Dow Company watching sea water roll back into the ocean at Kure Beach near Wilmington, N. C. and wishing they had some way to obtain the wealth that is dissolved in it.

In the last 12 months nearly \$100,000,000 dollars slipped through the chemists' fingers as they pumped 158,735,000,000 pounds of sea water through the plant to extract several thousand tons of bromine.

But, at present, the task of the small boy wishing for his candy or the super-Jimmy Valentine stealing the Fort Knox gold cache, is far simpler than that of the chemists in tapping the sea water for more of its liquid wealth.

Over \$33,000,000 worth of salt (2,140,000 tons) went through the chemists' ocean-side plant as one example. While it might have been recovered the cost of doing this would have been greater than the \$33,000,000.

Similarly, technological difficulty plus unfavorable economics blocked the recovery of \$33,000,000 worth of magnesium; \$18,000,000 worth of Epsom salts; \$10,000 value in iodine; \$42,000 worth of gold and \$29,000 in silver, to mention only a few others.

By letting the bromine extraction, already economical, pay the way, the recovery of some of this wealth might be undertaken as a by-product. But technical recovery difficulties would still remain.

The bromine recovered has already found its way into the gasoline tanks of America's pleasure cars, trucks and busses. You, and you, and you have been using it during the past year. Some day your children's, children's children may use the other items of oceanic wealth.

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# E FIELDS

## METEOROLOGY

### Lightning Is Caused by Break-Up of Raindrops

See Front Cover

**J**UNE is a month for lightning. Some of its beauty is recorded in the photograph on the front cover of this week's SCIENCE NEWS LETTER.

Whence lightning? According to a widely accepted theory, supported by many observations and laboratory experiments, the electricity of lightning is found in the breaking up of raindrops. This condition is realized in a thunderstorm where the updraft is sometimes very violent. This turbulent stream of air ascending breaks up the falling drops, disrupting them and forming positive charges of electricity on them. Negative electricity is formed in the air where the disruption takes place.

There are four kinds of lightning due to differences in the electrical condition of the atmosphere. (1) The usual streak lightning speeding from cloud to cloud or cloud to earth. (2) Rocket lightning, where the lightning seems to be moving slowly like a skyrocket. (3) Ball lightning (balls of fire in the sky) is seldom seen. It seems to be an illusion or a variation of rocket lightning. (4) Sheet or heat lightning is really not a fourth kind; it is simply the illumination of a cloud or the atmosphere, by either streak or rocket lightning.

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## FORESTRY

### Toward Fundamentals In Technical Education

**F**ORESTRY as a profession is showing signs of following a healthy educational lead set by engineering, in demanding of its young candidates solid foundations in basic principles rather than superstructure of detailed application. This trend receives approving comment in the *Journal of Forestry* (June).

The multiplicity of engineering courses that used to stuff college catalogues is being reduced largely because great industrial concerns, which are heavy "consumers" of engineering tal-

ent, have taken to training their own young men in special techniques, demanding only that they come prepared.

A big electrical company, for instance, prefers that its job candidates have their physics "down cold" and that they know the main outlines of electrical engineering thoroughly. It can teach them its own special designs and trick circuits.

Forestry schools, similarly, have had a tendency to a distractingly various lot of professional courses, until the student would lose track of general principles in his bewildered pursuit of a thousand particulars. He could not see the forestry for the individual courses in forestry.

Federal and state forest services, the Journal points out, hold a position analogous to that of the great industrial concerns. They are the principal employers of young graduates in forestry, and the types of their examinations will determine in large measure what courses the schools will offer. If forestry examinations demand fundamental education, that is what the schools will teach.

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## EUGENICS

### June Is Called the Ideal Human Mating Time

**J**UNE, month of brides, is the ideal time for human mating, Dr. Ellsworth Huntington, geographer and statistician, told the Eugenics Research Association meeting in New York City.

Men and women have their biological best time of mating just as do the birds. This is indicated, Dr. Huntington believes, by a record of the births that occur during the months from January to March.

Of those who survive infancy, individuals born in March live, on an average, about four years longer than those born in July, Dr. Huntington said. In March, the number of boys born just about equals the number of girls. This is a good sign because it indicates better conditions for the health of the babies before birth.

Children born in the first three months of the year have a better chance to become intellectual leaders, Dr. Huntington said. Twins, which are in general a sign of biological weakness, are not usually born at this time of year.

Dr. Huntington did not give any credit to the stars or the calendar for this superiority of winter-spring babies. Sunshine, better diet, more comfortable temperature combine to aid the expectant mother's health for these babies, he

indicated, and it is to the advantage of the child's health to be conceived when both parents are in the very best physical and perhaps mental condition.

When parents are advanced in age at the time of the birth of their children, that may be a factor contributing to mental disease in the children, Dr. Alfred Gordon, of Philadelphia, told the same meeting. Dr. Gordon had examined 30 cases which showed little or no history of mental abnormality in the family. One or both the parents were above average age when patient was born.

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## MEDICINE

### Improve Inoculation Against Scarlet Fever

**S**CARLET FEVER protection for many more children will probably be the result of research reported by Drs. Richard A. Kern, Jean Crump and Rudolph L. Roddy of Philadelphia at the meeting of the Association for the Study of Allergy in Atlantic City.

A method of protecting children and adults against this disease by injections of scarlet fever streptococcus toxin, something like protective inoculations against diphtheria, was developed some years ago. Chief drawback to this scarlet fever immunization has been the fact that severe reactions often followed the protective inoculations. This was particularly true among persons who suffered from allergy, such as hay fever, asthma or food hypersensitivity. Parents and many physicians were reluctant to give the inoculations because of the chance the children would have considerable pain and be sick for a day or two.

The Philadelphia physicians have found that this can be overcome by a change in the way the inoculations are given. Injecting the material into the skin instead of under it gives protection, as shown by negative Dick test, without any severe reactions.

### Tobacco Gave Rats Gangrene

Tobacco, it seems, is one of those things like strawberries, shell fish and certain pollens, for which some people have a special sensitiveness or allergy. Investigating the tobacco angle, Dr. Joseph Harkavy of New York tried injecting denicotinized tobacco into the peritoneum of rats. Gangrene of the animals' toes developed. The mechanism by which this occurs is tobacco sensitization, Dr. Harkavy reported today.

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