MUSCLE AND BONES

This strange looking skeleton is an object lesson of the new exhibit at the Museum of Science and Industry in New York.

scientifically approved way of brushing the teeth?

The answers to these and hundreds of other questions everyone has about the human body and its needs appear in the new exhibit at the New York Museum of Science and Industry.

The exhibit, planned so that visitors can push buttons and pull levers and then watch the wheels go around, tells the "Story of Man." The material was constructed abroad for the Oberlaender Trust and is lent to the Museum for its first showing in America.

Most interesting, probably, is the exhibit which enables visitors to predict their own length of life. You turn a lever until your present age and your sex show on two dials. Then you turn the lever again and a third dial tells the age to which you will probably live, based on life expectation figures.

Another unusual exhibit lets the visitor do a little blood mixing of his own and understand that complicated matter of the blood groups, so essential in blood transfusions. You can see for yourself how the blood serum and blood cells mix if the blood samples are from compatible groups, and how the cells clot dangerously together if serum from blood of an incompatible group is added.

A fearsome model that looks like a Hallowe'en nightmare is the man of muscle and bone—a skeleton with red strips representing the muscles of the body. Even more peculiar, looking, in fact, like an electrical man, is the figure that is half bony skeleton and half yellow wires. This model shows all the nerves on half the body.

Beginning with a model, enlarged 200 times, of the tiny egg from which human life starts, the exhibit shows the development of the body and all its organs and how they function.

Science News Letter, November 13, 1937

MEDICINE

High Blood Pressure Cause Still Unsolved Problem

Type Which Affects Most Hypertension Patients Seems Distinct From Other Diseases and Is Often Fatal

HIGH blood pressure is still an unsolved medical problem, it appears from discussions at the Tenth Annual Graduate Fortnight of the New York Academy of Medicine.

The condition is "a clinical sign, not a disease," Dr. Irvine H. Page of the Lilly Clinical Research Laboratory, Indianapolis, pointed out. "It is therefore not surprising that its causes are varied."

Many of the conditions which can cause high blood pressure are known, Dr. Page continued, but the number of patients in whom the cause is known is becoming small. The majority of patients now are suffering from a type of high blood pressure known medically as essential or malignant hypertension. The cause of this type is not known. It is called essential because it does not seem to be due to other diseases but almost to be a disease in itself, and the adjective malignant is used to indicate that it is always fatal.

Both the kidneys and the nervous system seems to be involved in the origin of high blood pressure. It may be, Dr. Page said, that the nervous system is over-active and "showers impulses" on normal blood vessels, or the reverse may be true, that the nervous system is normal but the blood vessels are overactive in their response to nerve stimulus. Neither of these possibilities, however, has been proved.

Surgical treatment of high blood pressure is still in the experimental stage, Dr. George J. Heuer, professor of surgery at Cornell University Medical College, said.

"The results of surgical treatment," he said, "must be studied over a period of years before they can be evaluated."

"The cause of hypertension is not yet known," Dr. Heuer said. He believed that probably no single cause is responsible for its initiation. Reporting on the experiments done on animals and on observations made on humans, he said that these "fail to indicate definitely that any of the glands of internal secretion, such as the hypophysis, adrenal, ovary, thyroid or pancreas are primarily at fault." Nor did he believe that that the central nervous system could be blamed.

Although surgical treatment of hypertension has not been established, nevertheless this procedure has effects on some of the manifestations of the disease, according to Dr. Heuer.

"What surgical procedure will prove to be the most productive of lasting benefit consistent with reasonable safety to the patient remains at the moment undecided," Dr. Heuer said in conclusion.

Kidney Disease

A kidney disease which occurs chiefly in young adults and children of flabby physical type and which can be cured although its cause is unknown was described by Dr. Albert A. Epstein of New York University College of Medicine.

The disease has the name nephrosis

and is not the same as nephritis, another kidney disease for which the cause is known. Characteristic symptoms of nephrosis, Dr. Epstein said, are edema or dropsy, decrease of kidney excretion and presence of albumen in the excretion.

The disease, according to Dr. Epstein, occurs most frequently in young adults and children.

"The individuals particularly prone to this malady," he said, "are of a peculiar flabby type—some being definitely obese before the disease is discovered."

While in most cases the disease begins insidiously, occasionally it is ushered in by an infection, or it may occur during or after pregnancy or in the course of some gland disturbance, notably thyroid disorder.

"Experience teaches," Dr. Epstein said, "that although its etiology is uncertain and its duration is usually long, it is amenable to treatment and cure. In essence, genuine nephrosis represents a subversion of protein metabolism."

Science News Letter, November 13, 1937

GENETICS-PSYCHOLOGY

Why Do the Quints Differ? A Puzzle For Science

The Five Little Dionnes, So Much Alike in Looks, Are Not the Same in Personality or in Abilities

THE "QUINTS" have provided science with one of its most interesting puzzles of current years. They are "identical," that is, they came from the same egg in their development before birth. They are "more alike than five peas in a pod."

Yet they do have differences in ability and personality. Why? Several of the 200 scientists and educators who attended the Toronto conference (Oct. 30) on the Dionne quintuplets have analyzed this problem in special statements to Science Service.

Quintuplets "Identical"; Biologists Report Tests

By DR. JOHN W. MacARTHUR
University of Toronto geneticist

THE DIONNE Quintuplets are an identical or monozygotic set, after all. This is the conclusion reached by Dr. N. H. C. Ford, biologist, of the University of Toronto, and myself and announced Oct. 30 to the group of scientists and public officials assembled to hear reports of researches on the biology and psychology of the famous quintuplets.

The chief problem was to discover as certainly as possible the interrelations of the members of the set, and decide whether they were all related as fraternals, as identicals, or were a mixed set, composed of both fraternal and identical pairs. The latter origin was suggested, in SCIENCE NEWS LETTER of Sept. 1, 1934, as by far the most probable origin.

The new evidence that all five are division products of the same fertilized egg or embryo was derived from as many inherited characters as it was possible to study in the quints and some of their older brothers and sisters.

In a family where faces, ears, eyes, hair and skin characteristics vary over a wide range, the quintuplets are remarkably uniform, and any two of them proved as much alike as identical twins. The five are so confusingly similar in facial features that few can consistently identify them correctly, except after becoming intimately acquainted with small individual differences in the form of the faces, ears, teeth, etc. Throughout the set the iris color is the same medium brown flecked and bordered with gray. There are the same long, much-curled dark brown eyelashes and the light brown eyebrows; reddish brown, slightly wavy hair; and the fair, rosy and unfreckled complexion. And they all belong to the same blood group, O.

Particular emphasis was laid on the resemblance of the hand and sole prints, since these are fixed before birth and constant through life. In addition to a general likeness as close as in identical twins, the quintuplets all share two rare features; namely whorls among the palm patterns, and a mild form of syndactyly of the second and third toes on each of the ten feet.

There is little mirror-imaging in the set; only Emilie appears to be left handed, and only Marie's crown hair whorl turns clockwise. There is a hint that these two are products of the last division.

The right and left hands of any members of the set are less alike than one of her hands is like a hand of a sister; in the sib comparisons the opposite was the case.

Such close resemblance as the quintuplets show in many characters would not be expected unless they all carry the same inheritance, and this would occur only if all are identical.

From the medical literature some 60 other cases of quintuplet births were traced, among them at least one or two other monozygotic sets. Thus the Dionnes are unique only in the sense that they have survived past infancy, and as an unbroken set.

Since they all have a common inheritance, the differences which now exist or subsequently arise between them in physical, mental and social characters may be attributed to the influence of environment.

Too Soon To Tell How Quintuplets Will Turn Out

By DR. FRANK N. FREEMAN
**Professor of Educational Psychology
University of Chicago**

THE DIONNE quintuplets furnish the only case in the history of the world in which five persons who have exactly the same heredity have been tested and measured scientifically. At the conference held in Toronto, the first public report was made of the tests which show that the quintuplets are beyond doubt identical. This means that they came from a single egg cell which divided and re-divided until five separate and complete individuals were formed.

The identity of the quintuplets is shown most clearly by their fingerprints, in which all are remarkably alike and all different from their other sisters and brothers. They all, therefore, have exactly the same start in life. How are they going to turn out?

It is too soon to answer this question. At three years of age there are still many hidden possibilities in ability and personality. But enough is shown in the tests and observations now reported to show that these little girls who started out exactly alike are clearly different in abilities as well as in the leadership they exercise in their own group, in their emotional expression, in the way