

ANATOMY

Shoulder Blades Yield a Secret

**Will You Live Long and Well, or Will You Die Young?
Your Shoulder Blades Conceal a Clue to the Answer**

By **WATSON DAVIS**

YOUR shoulder blades may some day have a vital meaning to your physician. In their shape, whether they are convex, straight, or concave along their inner edges close to your spine, may lie an index as to whether you should guard yourself against illnesses or whether you can with due discretion take reasonable chances on your health.

For the last twenty-four years an eminent neuropsychiatrist of St. Louis, Dr. William W. Graves, has given close study to the meaning to be read in the fact, now verified in thousands of cases, that human beings, apes, monkeys and some other mammals have different scapula shapes. He has examined thousands of living persons of all ages of life, healthy and sick; he has studied thousands of carefully preserved human skeletons, and he has come to the startling conclusion that the type of these bones is some indication of the health potentialities of the person to whom they belong.

"Convex" shoulder blades belong to those who are more likely to live long, adapt themselves well to their surroundings and have few diseases, studies thus far indicate. "Straight" or "concave" shoulder blades belong to those who may have more than their share of disease, and often adapt themselves poorly to their environment and have shorter lives.

Unusually Constant

At this point you are probably feeling your own shoulder blades with mixed hope and fear. Let Dr. Graves reassure you. It is not possible for any person to determine with accuracy just what sort of shoulder blades he has. Even physicians generally have not yet learned the proper technique of diagnosing them.

Research has thus far failed to reveal any other physical characteristic common to human races which is so constant throughout the life of the individual and which may have so much useful meaning to the trained observer.

The original family upon which

shoulder blade observations were made has been watched by Dr. Graves for some twenty-four years and he has also kept records of more than 200 other individuals in various periods of life to determine whether the shape of their shoulder blades changed as they grew older.

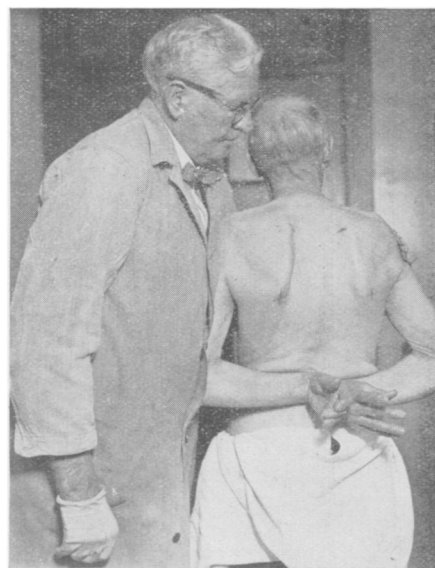
Into the public schools and universities, army recruiting stations and homes for the aged, into hospitals, reformatories, and other institutions which house the more unfortunate members of society, Dr. Graves took his investigations. In a hospital for returned overseas men suffering from tuberculosis, among a thousand patients, there were found to be three and one-half times as many concave types of shoulder blades as in men from the same group at the time of their demobilization.

Such investigations as these bore out his early inferences that shoulder blades might serve as an indication to health potentialities.

The number of investigations that he was able to make in this way was relatively small when compared with the total number of people in the world and he therefore invited through papers in medical journals and lectures before medical societies further information on the relation of various physical characteristics to health.

He visited anthropological museums throughout the country and in Europe, studying the skeletons of ancient and modern man, apes and other mammals preserved there. He studied skeletons of different races of men and of man at all age periods from before birth to old age. At the Western Reserve University alone he studied 1,500 human skeletons or 3,000 shoulder blades. The 1,500 skeletons there represent approximately 75,000 years of human life.

In all the different subjects representing ancient and modern man and at all the ages he found the same three types of shoulder blades. In the tiny skeletons of unborn babies the shoulder blades were convex, straight, and concave. As early as the twelfth week of



DR. WILLIAM W. GRAVES

Shoulder blade expert, showing how to make the shape of the bone prominent. Years of study and classification of shoulder blade types have taught him their value as an index to health and longevity.

fetal life, the types are found to be as typical as at any life period. Apparently man has always had these three types of scapulae, even back in prehistoric days.

From his studies Dr. Graves has concluded that shoulder blades are just as characteristic of you as any part of your body. Barring the effect of diseases or poison, you inherit the type of your shoulder blades from your parents, just as you inherit the shape of your nose or ears. If both of your parents have convex shoulder blades yours will also be convex. If both your parents have concave shoulder blades, yours will be concave. But if one parent has concave shoulder blades and the other convex, yours will be concave or straight. There are some exceptions to these rules but Dr. Graves has found no features common to human beings more constantly transmitted from parent to offspring than shoulder blade types.

One of Dr. Graves' most interesting findings was that at certain ages one shoulder blade type was more frequent than the others. For example, two-thirds of the children under ten years have the scaphoid (straight or concave) types, but only one-third of the people between 70 and 80 years have these

types. On the other hand, two-thirds of the men and women of 70 to 80 years have the convex and only one-third scaphoid types of shoulder blades.

Not only did Dr. Graves find this curious occurrence of the different types at different age levels, but many other observers reported the same thing. The straight and concave types, which Dr. Graves groups under the name scaphoid, are more frequent to young people, but get less and less frequent in occurrence as the age of the people examined increases. The convex type becomes more and more frequent among the progressively older groups of men and women.

Puzzling over this, Dr. Graves thought that it might be explained in one of several ways. The change in type might be the natural result of growth and development; the concave type shoulder blades of the child might become straight and later still convex. The second explanation was that some childhood disease, particularly rickets, might change one type to another. The third explanation was that occupation and environment might change the type of shoulder blades as a man grew older.

Further study showed that none of these explanations was true. In the first place, it is extremely unlikely that the type of the shoulder blades would change materially during the normal processes of growth, or even under the influence of disease or occupation or environment. Biology has no examples of such changes in type during the life cycle. Nor is there any disease known which changes the type of a bone.

"I have found that each type is equally common in males and in females, and it is known that both sexes are subject to the same laws governing development, growth and old age," Dr. Graves said.

Only One Explanation

It has seemed to Dr. Graves and to many others following his work that there can be only one plausible explanation of why the straight and concave types occur more frequently in the young and the convex more frequently in the old. This explanation is that those who have straight and concave types are often the people who are unduly susceptible to disease, poorly adaptable and short-lived.

"However, one should not conclude that every person possessing straight or concave types of shoulder blade is a weakling and will die young," warned Dr. Graves. "I have found that some of

the best types, both physically and mentally, are possessors of straight and concave shoulder blades, and some of the worst types are possessors of convex shoulder blades.

"It cannot be too strongly emphasized that a shoulder blade type should never be used as a positive index of a person's constitution or his tendency toward disease or health with the anticipation that the possessor of the one

type will die young and the possessor of the other will live to old age."

The person with an inherent susceptibility to disease must be strengthened and given special guidance and protection. Dr. Graves calls this susceptibility the soil factor. Shoulder blade types may have their greatest usefulness in aiding the physician to recognize this soil factor.

Science News Letter, January 17, 1931

CHEMISTRY

Margarin Made From Palm Oil Becomes Competitor of Butter

PALM OIL, heretofore used mainly in soap making, is proving a slippery customer for the butter makers who thought they had their market well protected by means of a ten-cent per pound tax on artificially colored oleomargarin.

Margarin makers have been experimenting with palm oil for some time. Lately they have succeeded in refining it to a point where it would not give a peculiar taste to margarin.

On Nov. 20 last they asked for a ruling from Internal Revenue Commissioner David Burnett as to whether margarin made with palm oil would be subject to the ten cent tax. They pointed out that the yellow color of this margarin was not produced artificially but came as a result of using the unbleached palm oil itself.

The Commissioner read the law and noticed the words "artificially colored" and ruled that palm oil margarin did not come within the scope of the law. Straightway one manufacturer ordered 700 barrels of palm oil and the wholesale price of butter fell. Protests from the dairy industry and from congressional representatives from dairy states immediately followed. The commissioner has been in many conferences during the past few weeks with representatives of the dairy industry, representatives of the oleomargarin industry, and congressmen.

It is the concensus of opinion that in order to take care of the palm oil competition the law will have to be amended. There is every desire to guard the butter industry of the country, inasmuch as butter and milk contain highly necessary vitamins for both children and adults.

In fact, so desirous is Congress of guarding the dairy industry that it is very probable that an embargo will soon be placed on imported butter and cheese for a period of about one year in order that conditions may better themselves in this country for the producer. Dairy men are pointing out that with conditions as they are at present palm oil margarin might be marketed as real butter.

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ELECTRICITY

Hot Photocells Give Largest Currents

THE photoelectric cell, magic lamp that has made possible television and talking movies, yields the most electric current when it is hot—at a temperature of a little less than 1,400 degrees Fahrenheit.

To the American Physical Society in Cleveland, Dimiter Ramadanoff, instructor in electrical engineering at Cornell University, reported his researches on the effect that temperature has on the current that comes from the photocell when light shines on it. With cells using the metal barium, he found that the current increased greatly as the temperature was raised, and was at a maximum around 1,364 degrees Fahrenheit. He also found a secondary maximum for the current at 1,040 degrees, but this was only observed when the cell was illuminated with an intermittent light.

Science News Letter, January 17, 1931

An old Roman inscription, lately deciphered, is a will in which money was left for the support of one hundred orphan girls.