

My intense dislike of the word "scientist" is due to the fact that it debases the currency. The word is not applied to a man to indicate respect for his scientific or philosophical attainments, but to indicate a certain disdainful attitude towards the truth claims of æsthetic, moral, and religious values. The distinction so often expressed between philosophers and scientists is a false one when it implies (and it is meant to imply) that philosophers are uninterested in or indifferent to the positive results of science.

H. WILDON CARR.

107 Church Street,
Chelsea, S.W.3.

The Biology of Verse.

IN NATURE for October 11, 1924, p. 534, I have reported the results of the only registrations of verse ever made and analysed. They show that verse is a current of speech energy of varying amount so adjusted as to come in more or less regular waves. When the centroids of these waves are calculated, they are found to occur at approximately equal periods.

The next problem is that of the source of this current of energy. The replies of many living poets to a question-paper agree without exception with all the statements I have been able to find from the poets of the past: they have no ideas whatever on the subject. They all assert, moreover, that the verse-form comes to them ready-made along with the poetic content. This poetic content, they all declare, is forced upon them by some inner power. The source of verse, therefore, must be sought in the source of poetry.

The poets all agree that the source of their poetry lies entirely outside of their consciousness. In psychological terms it is a product of the unconscious. In physiological terms it is a product of bodily processes that result in producing poetical feeling and ideas in consciousness. In either sense it is a biological phenomenon of which the ultimate explanation must be in biological terms.

On the psychological side there are the statements of famous poets of the past. Many say that they write because they must (Pope, Goethe, Schiller, Grillparzer, Hebbel, Brentano, and so on). One of them says that whenever a new poetical idea struck him he had to write it down even at the cost of his life. They often write in over-excited or half-conscious conditions (Goethe, etc.). They write to relieve themselves from mental strain or trouble (e.g. Byron). They write out their own inner selves (Byron, Goethe, Schiller, Hebbel). They write because they feel themselves mentally ill (Grillparzer, Heine). They write because they feel themselves to be criminals in need of confession (Hebbel, Ibsen). A poet is a lunatic (Shakespeare). Poetry flows from the poet like gum from a tree (Shakespeare). The statements that I have collected from living poets are along the same lines.

Further psychological information is furnished by the work of Freud and his gifted disciple, Otto Rank. Poetry is the result of an inner conflict. On one side is the fundamental part of the Unconscious, the "It," with its one impulse to have its own inflexible way and to obtain peace; on the other side is the Self, or the "I," with the wish to live, love, and enjoy by adapting itself to the environment. Out of the struggle there is engendered the Conscience, a kind of council of the League of Nations that sits in judgment over the self. Again, like the League of Nations, it is controlled by the stronger powers of the "It" and has the one function of condemning the weaker "I." At the instigation of the "It," Conscience takes every opportunity of declaring the

"I" to be a criminal worthy only of annihilation and death. It is kept from doing so only by the power of the Self to resist it. The details of this conflict must be sought in the works of Otto Rank.

The result of the conflict depends on the amount of fundamental energy, or kinetic drive, at the disposal of the Self. When this becomes small, as in misfortune, weakness, illness, or grief, the Self can no longer resist the efforts of "It" to get Conscience to pass a condemnation of the Self to some degree of death varying from withdrawal from social life to suicide. With more fundamental energy the Self struggles with varying success but never gets real control; this produces the condition of the neurasthenic failure. With a larger amount of fundamental energy the result depends on what compromise can be effected. Sometimes the Self compromises with the "It" by carrying out some of its anti-social demands; this produces the criminal. Sometimes the Self can win only by denying the truths of the environment; this produces the lunatic. Sometimes the Self can escape by affording the "It" a means of letting off its force in a way that partially lightens the pressure but yet does not bring the Self into conflict with the environment. This produces the class to which the poet belongs.

Poetry is thus the expression of the impulses of the "It" in a form acceptable to the environment. These impulses are familiar to Freudian analysts. Some of them have been exhaustively treated by Otto Rank. A complete general treatment of the poetic conflict has not yet been made.

It is my own belief, however, that this conflict can be reduced to biological terms that can even be measured. In NATURE for March 15, 1924, p. 386, I have shown that records of speech show the presence of three biological forces; the impulse to conform to the speech of the environment, the hindrance to successful conformity, and the impulse to correct the resulting defect. The three forces correspond quite well to the Freudian concept of the Self, the "It," and Conscience. In many speech records—both normal and pathological—the prevalence of one or another of these forces can be plainly seen and measured. It is a commonplace of my laboratory to use the size of the probable error in making speech sounds as a measure of the successful adaptation of the speaker to his social environment. A large probable error indicates either an increase of the inner hindrance to adaptation or a decrease in the impulse to correction—or in Freudian terms either an increase in the power of the "It," or a decrease in the force of the Self or a decrease in the power of Conscience. Quite characteristic is the fact that a very large probable error is diagnostic of general paralysis, a disease the earliest characteristic of which is a decay of the social sense, that is, of Conscience.

Whether the result of this conflict depends on metabolism or the presence or removal of toxins in the blood or on the hormone balance, biochemistry must determine. It is my belief that a physiological explanation quite parallel to the psychological one can be found.

In any case poetry is the product of a compromise among biological forces whereby the social force is strong enough to affect the adjustment by allowing the anti-social force some degree of expression.

The source of the verse form itself is now clear. Rhythmic speech is the primitive form of language. The linguist Prof. Jespersen of Copenhagen agrees with the poet that

Thus Nature drove; warbling rose
Man's voice in verse before he spoke in prose.

OEHLENSCHLÄGER.