

or the disease will start over again. In addition, a ten-mile "safety zone" outside the known infested area is also marked for cleaning up. In all, 5,000 square miles, containing 3,000,000 trees, must be policed.

Just as Washington frequently had to fight without enough ammunition, so the fighters for America's elms must go into this battle without sufficient funds

to complete the whole campaign. It has been estimated that another million dollars will be needed. Friends of the elms feel sure that the money will be forthcoming in time, if people realize that their own elms, even those as far from the scene of action as the Pacific Northwest, are endangered, unless the enemy is driven out before next June.

*Science News Letter, December 15, 1934*

PSYCHOLOGY

## Writings of Gertrude Stein Those of Woman Without Past

A POSSIBLE explanation, on a scientific basis, for the bewildering if amusing writings of Gertrude Stein has been vouchsafed by the Editor of *The Journal of the American Medical Association* (Dec. 1).

"Her writing seems to be the result of a stream of consciousness of a woman without a past," he says. Further explanation is, in part, as follows:

"Those familiar with such symptoms as automatic writing, palilalia, perseveration and verbigeration are inclined to wonder whether or not the literary abnormalities in which she (Miss Stein) indulges represent correlated distortions of the intellect, or whether the entire performance is in the nature of a hoax, and that Miss Stein produces her literary effusions with her tongue in her cheek.

"Palilalia is a form of speech disorder in which the patient repeats many times a word, a phrase or a sentence which he has just spoken. In addition, the speech tends to be uttered more and more quickly and less distinctly. . . .

### Verbal Perseveration

"An analogous condition is palilogia, a term sometimes applied to that form of rhetoric whereby the word or sentence is deliberately repeated for purposes of emphasis. Then there is also verbal perseveration, with the same word or phrase repeated as though the original idea persisted for an undue length of time in the patient's mind to the exclusion of fresh incoming ideas . . . .

"Now it is interesting in surveying the writings of Gertrude Stein to find that Miss Stein worked at Radcliffe with Münsterberg and that she wrote a paper, later printed in the *Harvard Psy-*

*chological Review* for September, 1896, under the title 'Normal Motor Automatism,' by Leon M. Solomons and Gertrude Stein. In their experiments, Mr. Solomons and Miss Stein attempted to investigate the limits of their own normal automatism, undertaking to see how far they could split their own personalities in a deliberate and purely artificial way. They were successful, according to B. F. Skinner (*Atlantic Monthly, Jan., 1934*), to the extent of being able to perform many acts, such as writing or reading aloud, in an automatic manner while carrying on at the same time other activity. Miss Stein reported that spontaneous automatic writing became easy after a little practice. Thus she said:

### Running in the Mind

"A phrase would seem to get into the head and keep repeating itself at every opportunity, and hang over from day to day even. The stuff written was grammatical, and the words and phrases fitted together all right, but there was not much connected thought. The unconsciousness was broken into every six or seven words by flashes of consciousness, so that one cannot be sure but what the slight element of connected thought which occasionally appeared was due to these flashes of consciousness. But the ability to write stuff that sounds all right, without consciousness, was fairly well demonstrated by the experiments."

"Obviously, therefore, the writing of Miss Gertrude Stein, such as appears in her plays, books and poems, is quite the same as she developed when experimenting with spontaneous automatic writing.

"Mr. Skinner points out that the ordinary reader cannot infer from this

writing that the author possesses any consistent point of view, because there is seldom, if any, intelligent expression of opinion.

"Her writing seems to be the result of a stream of consciousness of a woman without a past. The stream of consciousness is, of course, particularly well exemplified in some of the writings of James Joyce in *Ulysses*. Mr. Skinner is convinced that this spontaneous automatic writing by Miss Stein is that of a second personality successfully split off from her conscious self, and unfortunately a personality without any background, intellectual opinions or emotions. The mere fact that Miss Stein herself occasionally appears in the midst of the writings of this second personality would seem to be the proof of the opinion."

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BIOLOGY

## Ultraviolet Rays Make Rare Fish Transparent

ULTRAVIOLET radiation, depended on by basking beach mermaids to give them a fashionably dusky sun-tan, is used for an exactly opposite purpose in preparing specimens of rare fish for laboratory study and museum exhibition. In a study reported to the New York Zoological Society, Miss Gloria Hollister describes its use in a new preservation and clearing technique which takes dark skin colors out and leaves the specimens in a state of X-ray-like transparency, with every delicate detail of bone structure visible.

The process makes it possible to study the internal structure of rare species without resorting to dissection—an important matter when there may be only one or two specimens in existence. Even fine external details, which may not be clearly distinguishable in the natural state, are brought out by a combination of the ultraviolet "clearing" process with the use of the right kind of tissue stain.

The process begins with the fixing of at least the larger specimens in 70 per cent. alcohol, to make the tissues firm. This step is frequently not necessary with smaller fish.

Then the specimen is immersed briefly in distilled water, after which it is transferred to a weak solution of potassium hydroxide. Following this, it is stained in a potash solution of alizarin dye, a red color of vegetable origin.