

## Jury to Settle Glozel Controversy

The lively and heated controversy among European scientists as to whether objects dug up in profusion at Glozel, France, are properties of very ancient man, or are less than 2,000 years old, or whether they are merely crude faked antiquities, seems at last about to be settled. An international commission consisting of M. Hamal-Nandrin, of Belgium; M. Pittard, of Switzerland; Senor Bosch-Gimpera, of Spain; M. Absalon, of Czechoslovakia; Miss Dorothy Garrod, of England; and M. Forrer, M. Peyrony, and M. Favret, of France, is investigating the whole Glozel situation, and Dr. A. Morlet, who has presided at the field where the vases, brick tablets, and other objects have been unearthed, has agreed to accept the verdict, favorable or not, of the investigation.

Meanwhile, reports have stated that a French farm boy buried the objects that have been accepted as genuinely ancient by some of the most noted French archæologists. It has also been recently reported that a man named H. C. Rogers said that he planted the articles with the help of a French farmer.

On the other hand, the French government, not at all disturbed, has placed the site under the control of M. Peyrony, an eminent archæologist, and has declared it a national historic monument.

The articles dug up at the Glozel farm by Dr. Morlet and Emile Fradin, whose father owns the land at the site, are very curious and remarkable. Some of the pottery vases are moulded to resemble grotesque faces, with handles like ears. Many of the small clay tablets are covered with cryptic marks, which some experts believe is a primitive alphabetic writing, perhaps the oldest writing ever discovered. Others, however, say it is a kind of Latin, and that the remains belong to the comparatively recent Roman Empire days. And other experts consider the whole collection of vases, tablets, stone axes, spindles, and carved pieces of horn a carefully prepared but crude fake.

Dr. George Grant MacCurdy, of Yale University, noted American authority on prehistoric man in Europe, and who is believed to be the only American archæologist who has examined the site of Glozel, describes his visit in the following statement to Science Service:

"Mrs. MacCurdy and I visited Vichy and Glozel on June 9 and 10 last," said Dr. MacCurdy, "prior to opening the summer term of the American School of Prehistoric Research. Glozel is the name of the farm, some 23 kilometers southeast of Vichy, which belongs to the Fradin family.

"The morning we visited Glozel in company with Dr. Morlet (who can go to Glozel mornings only), the rain came down in torrents. We looked on while Morlet and Emile Fradin dug. They chose the spot, which was said to be the most productive at the moment. The trench was some 50 or 60 cm. deep.

"In a short time Fradin uncovered an implement of deer horn pointed at both ends. The next object, also found by Fradin, was a polished ax or celt of stone made of a pebble from the bed of a small stream known as La Vareille some 8 meters below and at the foot of the small terrace in which we were digging. As soon as the celt became visible, Dr. Morlet and Fradin invited me to take the digging knife and detach it; this I did with one hand, while holding an umbrella over myself with the other. The two specimens had been found within an hour and under such weather conditions as to make it practically impossible to say whether they had been found in situ or not.

"We then retreated to the farm house in order to see the Fradin collection of articles from the excavation. Our visit to Glozel ended with Dr. Morlet's return to Vichy at noon.

"I had expected to return later in the summer with the members of the School of Prehistoric Research, but later abandoned the idea because of Dr. Morlet's disinclination to allow 'students' to dig. I am therefore not familiar enough with the terrain nor with the specimens to make a definite pronouncement as to their authenticity.

"Some of them would look out of place among specimens, the authenticity of which cannot be questioned. But why prejudice a case, which is now in the hands of a duly appointed jury?

"While awaiting the verdict, a glimpse into the history of Glozel may not be out of place. Glozel

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## New Germicide

A liquid germicide, known as S.T.-37, that destroys bacteria so quickly that the time in which the reaction occurs cannot be accurately measured, has been developed by Dr. Veader Leonard, assisted by Dr. William A. Feirer at the Johns Hopkins School of Hygiene and Public Health.

The new germicide has the selective capacity of killing even the most resistant bacteria in 15 seconds without injuring the most delicate tissues. The active agent responsible for this extraordinary germicidal power is hexylresorcinol, a synthetic chemical harmless to man but possessing over 7 times the germ-killing power of pure carbolic acid.

Hexylresorcinol was first developed in the Hopkins laboratories about three years ago. Since that time it has come into general use by the medical profession both here and abroad as an internal antiseptic. Dr. Leonard has continued his search, however, to find a way of "harnessing" his new compound so that it could be put to use as a general antiseptic.

After many experiments a solvent consisting of glycerine diluted with water was found that seems to answer all practical purposes. Dr. Leonard's research has thrown a great deal of light on the explanation of the great speed and efficiency of the hexylresorcinol's germicidal action.

"All fluids," he explained, "are endowed with a physical property known as 'surface tension.' This cohesive force, which can be measured accurately in tiny units known as dynes, is the force which makes

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## PHYSICS

### Radio Makes Glass Glow Red

Glass tubes, in which have been obtained one of the highest vacuums that man can attain, glow with a strange red phosphorescence under the influence of very short radio waves. This curious effect has been found by Prof. R. W. Wood and Alfred L. Loomis, working in the latter's laboratory, but as yet neither of them can explain just why it happens. They have reported their results to the British scientific magazine, *Nature*.

By means of one of the most powerful vacuum pumps ever made, and of which but a very few are in the United States, the tube is exhausted of air. Previously it has been thoroughly cleaned with chemicals, and it is continually heated as the air is re-

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### New Germicide

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a fluid like pure water draw itself up into small separate drops on surfaces such as a window pane, instead of flowing out over the surface of the glass in a thin film. Pure water has a very high surface tension—namely, 77 dynes; and for this reason will not penetrate into tiny spaces into which fluids of low surface tension will readily flow. Now hexylresorcinol is so incorporated in Solution S.T.37 that the lowest possible surface tension is maintained—it amounts to only 37 dynes—a fact from which the name S.T.37 is derived. Being largely freed of this 'self-contracting' force, the solution is very penetrating. This allows the solution to come into contact with germs which may be lurking in the depths of tiny microscopic coverings—and which would otherwise escape destruction.

"Contact with the bacteria having been made, by means of this penetrating property, the same factor, low surface tension, now operates in two ways to speed up the destruction of the germ. In the first place, chemicals like hexylresorcinol which lower the surface tension of their solutions very powerfully are known to concentrate themselves very rapidly on the surface of any tiny non-crystalline particles with which the solution comes in contact. This phenomenon is known to the physicists as mechanical adsorption and hexylresorcinol shows it in high degree. Now it so happens that germs are non-crystalline particles and when brought in contact with S.T.-37 the hexylresorcinol immediately becomes concentrated on the surface of these germs. The agent which destroys them actually seeks them out and 'pounces' on them, so to speak."

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### Makes Glass Glow

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moved. After the exhaustion has passed far beyond the point where a high voltage electric current through metal points inside the tube can cause a glow, the oscillating waves are applied. This is with a rather low voltage, and corresponds to radio waves of six or seven meters in length. Then the tube itself shines with a reddish glow.

It is believed that the glow is due to partly broken-up atoms of oxygen from the silicon oxide of which the glass partly consists.

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### Glozel Controversy

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first came to the notice of prehistorians in Allier, France, early in 1924 when the school teachers of the department were invited to report on the archaeology of their respective communes. Results of this inquiry came to M. Viple, public prosecutor at Moulins. The latter's published account tells of how he was attracted by the report of Mlle. Picandet, which mentioned for the first time the discovery made on March 1, 1924, by Fradin and his son Emile on their farm known as Glozel.

"Their plough uncovered a flagstone some 30 by 15 centimeters in crudely rectangular form and bearing the imprint of an extremely large human hand. Searching further on the spot, they found at a depth of about one meter, a flagging of brick placed in pairs horizontally on the soil for a length of 2.5 meters.

"M. Clement investigated the discovery; he was joined by Viple. After a number of visits to the site, Clement brought out a report in May, 1925. In this report, he abandoned the original idea of a sepulture for one of a furnace or oven of a glass founder.

"According to Viple the first brick or plaque with inscription had been found by Emile Fradin on the occasion of the first discoveries. The inscribed plaque had been placed in his garden; it was not until January, 1925, that he noticed the inscription. Clement's last visit to the place was in June, 1925. At this point, Dr. A. Morlet of Vichy appears on the scene as co-explorer with Emile Fradin. It seems that Clement had not personally discovered any specimens. Dr. Morlet and Fradin have had much better luck, as may be attested by the specimens in possession of Dr. Morlet at Vichy and the little Fradin museum at Glozel.

"Morlet's first paper was published privately in September, 1925. This fell into the hands of Van Gennep, prehistoric chronicler for the *Mercur de France*, in which journal a number of articles on Glozel have since appeared. Dr. Morlet took a series of originals to Paris and showed them to Boule, Jullian, Salomon Reinach, Breuil, Dussaud, et al.

"Among those who have actually visited the site are: Capitan, Breuil, Deperey, Esperandieu, Loth, Reinach and Vayson, to mention only French savants."

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