

to take action. And that meant creating a new and distinguishing animal personality, to be symbolically slain.

But, says Count Begouin, "if doing as little as possible was a human trait even then, the artist thought twice before making a picture as important as this feline, and was content to re-make and change head and tail."

Value in the Rite

His conclusion is that the rite of painting, not the picture itself, was important. The finished work was no more valued than the file copy of some government proceeding today.

One more reason why the cave man's art is believed to be magic is that some animals were painted without eyes, ears, or even heads. This might be dismissed as carelessness, except that the same thing was done in ancient Egypt for magic. An old papyrus document tells of this device to keep wild game from seeing or hearing the hunter's stealthy approach.

Which began first in the world, painting or sculpture, has been warmly argued. The French archaeologist says the evidence points to a parallel development. He considers that early sorcerers used both techniques for the welfare of their society.

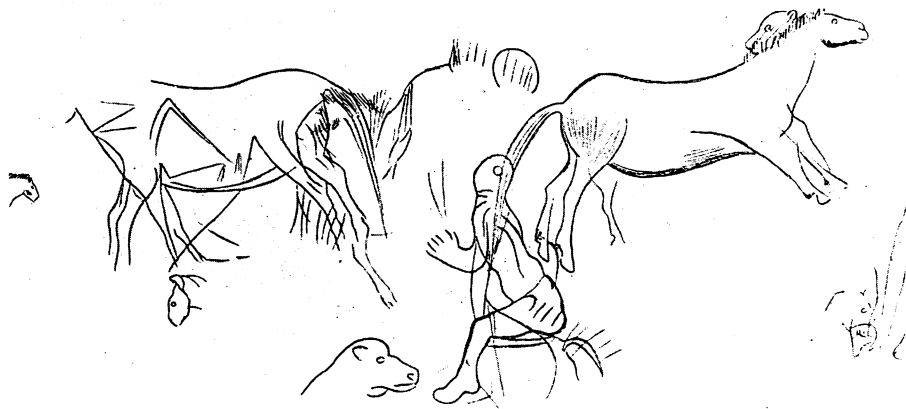
By this view, the grotesque sculptures of over-fat women, which science dubs Stone Age Venuses, are seen as objects of magic value. Most archaeologists do take this view, believing that the feminine figures were portrayed not from any modernistic art school ideas, but because the early sculptors were carving women of the maternal type. Increasing the number of a tribe's warriors and hunters was advocated then, just as it is in some nations of the world today. And magic was the cave world way of providing official backing for a bigger population.

Nevertheless, the far-from-streamlined Venuses of the Stone Age may have been the admired type, long preceding blondes. It is only later toward the end of the Stone Age that the Venus de Milo form of woman became the ideal, according to one anthropologist.

Besides paintings and sculptured objects, other clues to magic rites of the Old Stone Age can be cited. Count Begouin is particularly impressed by the clay manikin of a bear cub found in a cave.

The clay image of the cub had no head, and between its paws when found, lay the real skull of a young bear. The statue is marred by blows, and it is worn by some covering that has rubbed against it.

By Sherlock Holmes reasoning, this



LAZINESS

The mystery of the extra feet: Stone Age artists revised their work because they were lazy, is the view of Count Begouin, noted French archaeologist. They persuaded their fellows that a new tail or legs made a new animal, just as good for the sympathetic magic of insuring luck in hunting.

image was made to meet the emergency of some bears that constituted a public danger to the tribe. The sorcerer met with a committee of hunters in his mysterious cave lair, and there he rigged up a bear skull and bearskin over the clay manikin, and the hunters beat the imitation bear and went away full of confidence that they would kill real bears for the tribe. In just such rites, says the French archaeologist, American Indians and African pygmies of later times have prepared for successful hunting.

Even the footprints of the human beings who frequented the caves have been trailed by Count Begouin and his three sons, after whom the Cave of the Three Sons was named. In one cave which he explored, called Tuc d'Audoubert, he had to break his way through thick stalagmites to reach a gallery, and there, undisturbed for thousands of years, he found bare footprints of men so clear that with a magnifying glass he could recognize texture of the skin.

A ritual dance was performed here, he deduces. He can trace five different tracks, which are those of marching feet, following a leader. They are feet of young people in their early teens, and they moved in their ritual formation toward the figures of a male and female bison carved in clay. No wounds or darts mar the figures of these bison. The rite was apparently one of initiation into manhood not unlike the sort of thing young primitives of today perform.

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Science News Letter, July 1, 1939

ARCHAEOLOGY

Three Uses for Straw in Egypt's Brick Making

THE PLIGHT of Bible Israelites, when a hard-hearted pharaoh refused them straw for their brick-making in Egypt, has often puzzled readers. Pharaoh's commandeered builders were left to find their own straw or do without it. But how much of a hardship was that, anyway?

Three ways in which Egypt's brick makers used straw are explained by Sir Flinders Petrie in his new book "Egyptian Architecture," and they offer some points for understanding the Israelite problem.

Egyptian brick, he explains, was generally dried in the sun. And when the black Nile mud—that was most often used—dried and hardened, it would contract as much as one-eighth of its size unless some other substance were mixed with it to prevent contraction. Chopped straw could be used for this. Or sand would serve the purpose. Some of the bricks in Egyptian buildings contain no straw, so investigators have commented.

But the straw had two other uses for which Prof. Petrie names no substitutes. Workers were accustomed to roll each lump of clay in straw dust before molding it. The straw overcoat would prevent the brick from eroding away in the rain, and more immediately it made the moulder's task easier by preventing the mud from sticking to the oblong wooden mould.

This latter point may have been the problem that most disturbed the Israelites. They were expected to turn out

as much work, yet must gather straw, and they could hardly work fast without it.

Egyptian bricks were more varied in size than modern building brick. Prof. Petrie cites buildings in Egypt made with huge bricks, 23.6 inches by 12.1. The smallest brick was only seven or eight inches long.

When the Israelites were in Egyptian bondage, the building style favored large bricks, about 15 inches or longer. Prof. Petrie says it would require several men to move one of the largest bricks without breaking the edges, and two men to do the brick laying, all of which adds to our mental picture of Israelites in Egypt. *Science News Letter, July 1, 1939*

PHYSIOLOGY

"Panting Hormone" May Aid In Drowning Accidents

A "PANTING" hormone effect that promotes rapid breathing has been discovered by Drs. Theodore Koppanyi and C. R. Linegar of the Georgetown University School of Medicine. Possible human clinical use of this neurohormone is foreseen in cases that need respiratory stimulation, such as gas poisoning or drowning accidents.

Violent panting is produced within 15 seconds after acetylcholine, another hormone now made synthetically, is injected. The neurohormone that produces the quick breathing is poured out into the blood stream when the ends of the nerves are stimulated by this substance.

The Georgetown University scientists believe that the hormone produced is the same or very similar to sympathin, the hormone discovered by Dr. Walter B. Cannon of Harvard. Sympathin stimulates the sympathetic nervous system, raising blood pressure, speeding the heart beat, relaxing the muscles around the lower digestive tract and dilating the pupils of the eyes. The newly found respiratory effect is also a function of the sympathetic nervous system.

After announcing their research in *Science*, Drs. Koppanyi and Linegar plan to work on the extraction of the hormone from the blood in order that it may be used experimentally in further tests. *Science News Letter, July 1, 1939*

Rich deposits of tantalum and columbium are reported in the Belgian Congo.

Floods in the United States ordinarily cost about 100 million dollars in damage a year; but the Mississippi River flood of 1927 cost three times that much.

PSYCHOLOGY—SOCIOLOGY

Reform of Prisoners Cannot Take Place Inside Prisons

THAT we should abandon the attempts to reform men in reformatories, but expend the same energy in rehabilitating only those criminals who show some promise of becoming worthwhile citizens, is the proposal of two U. S. Public Health Service officers familiar with prison personalities.

Inside the prison walls it is practically impossible for the prisoner to reform, declare these experts in a new book *Problems in Prison Psychiatry*, by Drs. J. G. Wilson and M. J. Pescor.

Any change in character must come about by the prisoner's own volition and cannot be produced through force. But because discipline in prisons must be maintained, such cooperation between the custodial force and prisoners is practically impossible.

Fraternalizing between guards and prisoners is strictly forbidden, and this rule not only prevents cooperation but it promotes enmity, deceit, and bitterness.

Other influences acting to oppose reformation in prison are the rigid regimentation, the written rules that govern every movement of the prisoner for every one of the twenty-four hours, leaving

him no chance for initiative, and the absence of women. And, somewhat paradoxically, we must also add the type of coddling which relieves the prisoner of all responsibility and feeds, clothes and cares for his routine as though he were an infant.

These conditions interfere seriously, these experts declare, with a program of rehabilitation. The prison now serves as a means of segregating and punishing dangerous prisoners—for the revenge and protection of the public.

About one-fourth, they estimate, of the men now in prison should remain there indefinitely. They should be made as happy and comfortable as possible under conditions which demand safe custody, but no efforts should be wasted on their reformation.

The other three-fourths can be safely paroled. With them could go at least three-fourths of the prison personnel engaged in their rehabilitation.

Outside the prison walls these groups could work together for rehabilitation with profit to both the prisoner and society.

Science News Letter, July 1, 1939

PSYCHOLOGY

Jazz Enters the Laboratory For Psychological Study

SYNCOPIATION is not the new thing that jitterbugs probably believe, and yet scientific understanding of its appeal for dancing humans has never yet been attained.

Know where syncopation got its start? Not in Harlem or Tin Pan Alley or the African jungle; syncopation is a device of the classic Greek poets.

The rhythmic device of superimposing a one-two-three rhythm upon a one-two-three-four fundamental so that the accented beat of the three-part rhythm fell on the unaccented beats of the four-part rhythm is characteristic of American jazz but did not originate there.

Such good classical compositions as Beethoven's *Symphony in B-flat* and Chopin's *Valse in A-flat, Op. 42* use ex-

actly this same device. The former makes a passage in common time sound as if it were in triple. The Chopin piece achieves a syncopical effect by placing a melody in two-part time over an accompaniment in three-part time.

Rhythm is enjoyed only through movement, psychologists seem mostly to agree. The movement may be violent as it is with the jitterbug or the members of a modern swing band. Or it may take place only in the imagination or in tiny movements of an involuntary and unrecognized sort.

Syncopation seems to be enjoyed because the variety in accent is superimposed upon a regularity of rhythm that makes jazz popular for dancing.

Subjecting syncopation to laboratory