ARCHÆOLOGY

No Roman Horse Collars

Did Rome fall because no public-spirited citizen knew enough to invent a harness that would adequately utilize horse power, This weak joint in the armor of the fallen empires of antiquity was pointed out by Commandant Lefebvre des Noettes at a recent meeting of the French Institute of Anthropology.

Commandant des Noettes has made a complete survey of the history of the use of animal motive power from the early dawn of civilization down to the present time. The harness of the ancients, he explained, had for its principal organ of traction a collar consisting of a leather band that went around the neck like a dog collar without touching the shoulders and which was attached to a wooden yoke just above the withers. This collar was so placed that it most effectively cut off the animal's wind by pressing on his wind pipe and the large artery of the throat.

As soon as a team felt the weight of a chariot and its passengers exerting pressure on the collar they were forced to rear up their heads and dash off to save themselves from strangling. Hence the rampant attitude of all the horses depicted in ancient papyri and sculptures, declared Commandant des Noettes.

As a result of this drawback the great civilizations of the past were never able to get more than a fraction of the potential motive power from their horses. Ox teams operating with a wooden yoke attached to the horns, not greatly different from that in use today, did not suffer from the oppressive collar and in consequence did most of what heavy hauling was done. Both oxen and horses were unshod and in consequence were not much good in rough ground.

Data obtained from translations of the Greek Historian Xenophon and from the Theodosian code about a thousand years later, said Commandant des Noettes, indicate that no team of oxen in ancient times was ever considered capable of transporting a load of over half a ton. Various ineffectual attempts were made to modify to better advantage the accepted type of harness, but not until after the era of Charlemagne, about the time of the beginning of the Capet dynasty in France, did some inventive genius devise the horse collar that was practical.

For six hundred years the water mill for grinding corn had failed to bring great benefit to the Romans simply because it took numberless animals to draw enough grain to supply its needs. Where grain could not be transported in ships the arduous labor of hand grinding continued to be the order of the day. The lack of adequite transportation of raw products and the consequent dependence on slave labor, according to Commandant des Noettes, constituted the great weakness of the civilizations of the past. The invention of the modern harness gave to the world, he declared, a motive force, more powerful and economical than slavery.

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PHYSICS

Danger in Unwashed Dishes

Never let the dishes in which gelatin desserts have been served stand over night in the kitchen sink! This is the warning issued to housewives by Dr. Victor Cofman, physical chemist, at Pennsylvania State College. For gelatin is a colloid, one of those hybrid substances that, from the point of view of the physicist, are neither a solid nor a liquid. When gelatin drys up the force it exerts is strong enough to pull chips of glass out of the family sherbet glasses.

The ancient Egyptians exercised this same principle of colloid dynamics, Dr. Cofman declared, when they drove a wooden wedge into a crack and then poured water on it to swell the wedge and so split the rock. When the dried colloids in the wood absorb moisture, they expand and exert terrific pressure.

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BOTANY

Counterfeit Plants

Counterfeiting of rare botanical specimens from Mexico has been discovered by Dr. Paul C. Standley of the National Herbarium, U. S. National Museum, in the course of arranging the government's immense collections of dried and pressed plants. About ten years ago, Brother G. Arsene of the Christian Brothers religious order, an enthusiastic botanist, sent to the National Museum here and to France, extensive collections of Mexican plants. But the demand for Mexican plant specimens was greater than the supply and unscrupulous botanical dealers in Europe counterfeited Brother Arsene's plants by using false labels and plants more easily obtained from other localities.

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The majority of snow storms deposit only from two to five inches of snow.

PSYCHOLOGY

Likes Linked with Careers

The list of things a bookkeeper likes and dislikes differs from an actor's list or a soldier's. A new method of measuring these characteristic interests in individuals for use in guiding them into congenial careers is described by Edward K. Strong, Jr., psychologist at Stanford University.

Dr. Strong's method measures the similarity between the interests of the person tested and the interests of a given occupational group. The test includes 263 items and the individual must say that he likes, dislikes, or is indifferent to each item. For instance, the majority of certified public accountants like bookkeeping. If an individual likes bookkeeping he is credited with an interest that is characteristic of certified public accountants. The complete test, Dr. Strong explained, discovers whether or not an individual's interests coincide with those interests which distinguish a certain occupational group from other groups.

It has been shown that college students planning to be engineers have about the same line of interests as experienced engineers, Dr. Strong stated. This indicates that the interests characteristic of an occupation are present in men prior to technical training and practical experience.

"Presumably these interests lead to their vocational choice, and are not the result of the vocation itself," he said.

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MEDICINE

Fungi As Causes of Disease

Fungi may play an important role in certain types of infection in man, according to Dr. C. L. Shear of the U. S. Department of Agriculture. He states that the constantly increasing number of microfungi found associated with lesions and other diseased conditions in man emphasizes the need of more detailed research on their life histories and relationships with other organisms.

The parasitic fungi that make up many of the types thus far found associated with diseased conditions in man are very difficult to grow in the laboratory. Close cooperation between medical men and the expert mycologist, or specialist in fungi, is necessary for the understanding and clearing up this as well as many other problems in this field, Dr. Shear declares.

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