

years. By all the recognized physical and chemical tests this cement passes the British standard specification, but in respect of manufacture it would be barred because slag has been added to it after clinkering. In Scotland a form of this cement has been made for the past 11 years called Coltness Portland cement.

In addition to increasing sources of supply, the Department of Scientific and Industrial Research is making inquiries into the question of the more economical working of processes which have become traditional, with a view to spreading the knowledge thus gained. There is an inquiry at present going on into the economical use of fuel in the burning of bricks. The greatest experts in the country at present find themselves at a loss to state exactly the total quantities of coal needed to burn bricks, and the practice varies most illogically in different brickfields.

Another inquiry is being conducted into the question of the gas-firing of kilns. This method of firing is in use in the potteries for firing clay goods, and it has been used in Scotland for the past 40 years for burning fire-bricks. But the object of the present inquiry is to ascertain whether it can be used for firing ordinary bricks. An expert investigator is being sent over England, Belgium, Germany, and the United States of America to collect the latest data.

THE GORGAS MEMORIAL INSTITUTE

As has been noted in SCIENCE, Dr. Richard P. Strong, head of the Harvard School of Tropical Medicine, has been appointed scientific director of the Gorgas Memorial Institute which will be established at Panama for the study of tropical diseases. Dr. Strong will continue his connection with the Harvard School.

The *Harvard Alumni Bulletin* states that the Gorgas Memorial will constitute a tropical station for the Harvard School of Tropical Medicine and for other medical schools. The work in the laboratories at Panama will be separated into four divisions: 1, bacteriology and pathology; 2, protozoology and helminthology; 3, entomology; 4, biological chemistry and pharmacology.

There will be intimate association and co-operation between the Gorgas Memorial Institute and the Santo Tomas and Aneon Hospitals and the Palo Saco Leper Asylum, and the patients in these institutions will be available for observation and study. Venomous animals, poisonous plants, tropical climatology, and the biological effects of sunlight, will also receive attention in the work of the institute.

Provision will be made for advanced instruction in tropical medicine and hygiene of a limited number of properly-qualified graduates of recognized medical schools. A limited number of advanced students will also be admitted for special investigation upon tropical diseases and their prevention.

Properly-qualified volunteer workers will also be received and the privileges of the institute will be extended and a special effort made to attract experienced investigators from scientific institutions in different parts of the world, to carry on researches which can particularly favorably be conducted in a tropical country. It is especially hoped that members of scientific faculties will avail themselves of this opportunity during their sabbatical years or other periods of university leave.

The larger part of the research work of the institute will be carried out in the laboratories in Panama, but it is also contemplated that from time to time field expeditions will be sent to other portions of the tropics for the solution of special problems in connection with the diseases of men or animals.

THE TEACHING OF EVOLUTION IN THE KENTUCKY SCHOOLS

A BILL has been introduced into the Kentucky legislature forbidding the use of textbooks in the public schools in which the doctrine of evolution is taught. The movement is said to have been forwarded by lectures in the state by Mr. William Jennings Bryan. A number of telegrams have been addressed to Dr. Frank L. McVey, president of the University of Kentucky, among which are the following:

Cannot believe that any American legislature can be induced to prohibit the teaching in public schools of evolution or of any other scientific

hypothesis of proven value.—Charles W. Eliot, president emeritus of Harvard University.

Should regard bill such as you suggest certain to make Kentucky the laughing stock of the world. To prohibit the scientific teaching of the facts of evolution would involve adopting intellectual attitude of the twelfth century. It is a proposition which could not be seriously entertained by any really intelligent person.—James R. Angell, president of Yale University.

I take it for granted that the introducer of the bill is in close communion with the rulers of Soviet Russia, since he is faithfully reproducing one of their fundamental policies. Truly we are getting on.—Nicholas Murray Butler, president of Columbia University.

In the name of two hundred and fifty colleges and universities located in forty-two states we pray Kentucky will not commit intellectual suicide by prohibiting the teaching of evolution or the use of books favoring evolution.'—Robert L. Kelly, executive secretary, Association of American Colleges, New York.

Any attempt to impose legislative restrictions on the teachers of science is contrary to all the principles on which the American Republic has been founded.—Charles S. MacFarland, general secretary Federal Council of the Churches of Christ in America, New York.

CARDINAL DOUGHERTY ON VIVISECTION

CARDINAL DOUGHERTY, of Philadelphia, under date of December 30, 1921, addressed the following letter to the Society for the Protection of Scientific Research:

Having been asked to give an expression of opinion on the subject of vivisection, I deem it needless to say that, with you and all others opposed to cruelty of whatever kind, I deplore any abuse of vivisection that may cause unnecessary pain to lower animals.

But as actually conducted for the advancement of medical research, vivisection seems to me not only unobjectionable, but even praiseworthy. Scientifically carried out, it is, as you know better than I, almost entirely confined to the inoculation of mice, rats, guinea pigs and rabbits, and is much less frequently practiced on cats, dogs, horses and other higher species of brute animals. Since the invention of anesthetics, and with the use of antiseptic methods, it has become practically painless. Animals used for experimental purposes are well fed and sheltered, and in many respects are better off than those in a

state of nature or in subjection to work. They escape the rapacity of fiercer and larger animals, the ill-usage of sport, the drudgery of toil, exposure to the heat and cold of the seasons, and the cruelties of keepers, drivers and exploiters.

According to the law of nature, the lower species of creatures exist for the higher. The clod of earth supports the plant. The vegetable kingdom supplies the wants of the animal. The brute animal and all other inferior things are for the good of man, who was made directly for the glory of God. Man, then, may use all inferior things for his own benefit.

We exterminate vermin and insects, roaches, mice, rats and serpents, for the sake of health, cleanliness and comfort. The children in our schools are taught to combat the plague of flies as carriers of noxious microbes. We kill animals, fowls and fish for our food. Fishermen bait fish with live worms.

If, then, to preserve or restore health, to prolong life, and even to seek pleasure, it is permissible to inflict pain and death upon inferior forms of animal life, why may not the scientific man, for the common good, experiment on lower animals, especially when he takes every precaution against unwarranted infliction of pain by the use of anesthetics and by antiseptic methods?

Animals, themselves, owe to vivisection a great debt. Epizootic diseases, like anthrax, swine-fever, chicken cholera, silk-worm disease, cattle tuberculosis, which, in the past, caused untold suffering to animals, and every year killed them by millions, have been brought under control by the experiments of vivisection.

But man is the chief beneficiary. For it has been mainly owing to these experiments that great discoveries have taken place regarding the nervous system, bone growth, the blood, digestion, infections, serums, antitoxins and vaccinations; and without vivisection little or no progress would have been made in physiology, pathology, bacteriology and therapeutics.

To forbid vivisection would be to hamper science, do a mischief to the human race and foster misplaced sympathy.

SCIENTIFIC NOTES AND NEWS

A SUMMER meeting of the American Association for the Advancement of Science will, by recent vote of the executive committee of the council, be held at Salt Lake City from June 22 to 24, in conjunction with the annual