●RADIO

June 29, 4:15 p.m., E.S.T.

SCIENCE TESTS MATERIALS—C. L. Warwick, Secretary of the American Society for Testing Materials, and A. C. Fieldner of the U. S. Bureau of Mines.

In the Science Service series of radio discussions over the Columbia Broadcasting System.

quakes was mentioned by Rev. J. Emilio Ramirez, S. J., of St. Louis University, in his discussion of the actively seismic region in the Departmento de Narino, on the southwest Pacific coast of Colombia. Ever since the days of the Spanish conquest there have been records of frequent earthquakes there, and the Indians had traditions of terrible earth-shakings before the white men came.

This uneasy region is about the size of Belgium, Father Ramirez said, and it has half a million population. Since the region is very mountainous, calamitous landslides, floods, and mudslides sometimes lend additional horror to the more direct effects of the quakes.

Insurance Trouble

Earthquake science, or seismology, has a number of practical aspects, and research in it must be pursued without letup because of the importance of certain unsolved problems.

This was indicated in an address by Captain N. H. Heck of the U. S. Coast and Geodetic Survey.

Some companies refuse to write insurance in regions with an earthquake history, said Capt. Heck. Insurance rates are always calculated on the statistical chances of a certain type of trouble happening at a given definite place within a unit time period. But although it is possible to say that earthquakes are likely to happen in a given general region, say the Andes or southern Italy, it is impossible to pin them to a definite locality, say Lima or Naples. And guessing at time is even worse; it is absolutely impossible to make an honest and accurate time-forecast of an earthquake.

Nevertheless, the data accumulated by earthquake research even now have considerable value in practical affairs. Knowledge that a region is "seismic" that sooner or later a severe earthquake is likely to occur, enables government officers and Red Cross workers to concentrate staple relief supplies at strategic transportation centers and to formulate "plans of battle" to go into effect when the attack comes.

Study of instruments and of skyscraper models set up on "shaking tables" in engineering laboratories have enabled architects to correct certain weaknesses in specifications for buildings to be erected in earthquake regions. These researches are still in active progress, so that further advances may be expected.

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ZOOLOGY

Records of "Gibbonese" Made in Jungles of Siam

FIRST phonograph records of the "language" of the gibbon, key animal in the evolution of man, have been made this spring in the mountain forests of northern Siam by an expedition from Harvard University, the Johns Hopkins University, and Bard College.

They are expected to constitute one of the more important aspects of the expedition's pioneering first-hand study of the natural behavior and physical character of the Asiatic anthropoids. From the expedition as a whole the group hopes to glean important new clues to man's early development and the jungle origins of his social systems that will aid in unraveling some of the more puzzling problems of human evolution.

To this end the seven American scientists comprising the party are applying modern psychology, sociology and anatomy to their examination of the gibbon's home life, testing primarily the position of the gibbon on the family tree of the anthropoid apes and even of man.

Similar to man physically, the gibbon is gregarious and monogamous as well, facts that lead scientists to believe that in his natural habitat they may find traces of the origins of man's most firmly established institutions, his family and group life.

Despite numerous difficulties, including a brush fire that nearly wiped out the base camp on Mt. Angka, the expedition's investigations have thus far been very successful, declares Harold J. Coolidge, Jr., of the Harvard Museum of Comparative Zoology, leader of the group. It left this country in January and has been in the field since March.

Judicious use of blinds and screens have enabled the scientists to approach within close range of the animals without disturbing them. Detailed photographs of their activities have been obtained in addition to the pioneer phonograph records.

These records are usually clear and are so accurate that when they were played back to the gibbons, the animals responded immediately, varying their reactions as each new call came from the loudspeaker. The expedition hopes to continue these valuable recordings until a complete catalogue of all the major vocal patterns of the gibbon is obtained.

Dr. C. R. Carpenter of Bard College, who made the recordings, has also conducted detailed observation of 16 family groups of wild gibbons as well as a dozen captive animals in the expedition's camp.

Other members of the party, assisted by native hunters, have collected a series of gibbons for study of anatomical and

morphological problems. Some of these specimens were obtained in prenatal stages and are expected to be especially valuable in comparative embryology.

Dr. Carpenter is still in Siam and will remain there until the rainy season sets in in July, but the rest of the group have now gone to British North Borneo to study orang-utans, gibbons and proboscis monkeys. Members of this group are Prof. Adolph H. Schultz of the Johns Hopkins University, Sherwood H. Washburn of Cambridge, J. A. Griswold of the Harvard Museum, Andrew Wylie of Washington, and John T. Cooledge of Milton, Mass., the party's photographer. Various members will later visit Java and Sumatra.

Cooperatively financed by the Carnegie Institution, the Milton and Sheldon funds of Harvard, the Columbia University Council for Research in the Social Sciences, and from several private donations, the studies are expected to provide a much-needed control for laboratory observations made of these animals.

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coming rare as a result of inspection and testing of dairy cattle and the pasteurizing and boiling of all milk.

Aid to Singers

The "vitally important" role of the throat specialist in the training of a singer was described by Dr. Robert F. Ridpath of Philadelphia. Dr. Ridpath urged fellow throat specialists to make a special study of the art of voice cultivation. A great many "vocal tragedies" could be avoided by the informed physician, Dr. Ridpath said.

Most singing teachers try to make sopranos of all girls, he pointed out, and tenors of all men. The character of the voice, however, is determined by anatomical features that no amount of training can change, Dr. Ridpath declared. Among these are the size, shape and length of the vocal cords and especially the time of adolescence. The tenor matures early; his larynx (voice box) grows quickly and the vocal cords are short. Similarly, the earlier adolescence comes in the girl the shorter her vocal cords and the higher her voice is pitched.

The tenor and soprano are short, Dr. Ridpath pointed out. Baritones, bassos and contraltos are of large build and tall.

The general health of the singer is important and the physician should watch this as well as the voice producing apparatus. Loss of sweetness of tone, development of a tremolo, hoarseness and shrillness are danger signals and their neglect may lead to vocal ruin.

"By periodic examinations the physician can see and sometimes forestall such conditions as inflammation of the cords, vocal nodules, relaxation of the cords and other ills that afflict singers," Dr. Ridpath concluded. "That the physician is finally called on to treat the pathological condition is to be deplored because the mischief may be beyond repair—the mechanism being permanently damaged."

Hospital Insurance Opposed

Group hospital insurance, now in effect in many parts of the country, is a first step toward state medicine. This warning appeared in a report of the association's bureau of medical economics, which has been studying this and other related problems. The danger, according to the report, lies in the fact that hospital contracts under these insurance plans cannot be limited to essential hospital services but must include medical services, such as anesthesia, clinical laboratory diagnostic tests, X-rays and radium treatments and physical therapy.

While the general public may not see danger in state medicine, the report points out two other dangers in group hospital plans that are easily seen to concern the man in the street. One is that group hospitalization is actually a form of insurance coverage, "yet actuarial data on which to base sound premium rates are not available."

The second danger is that group hospitalization plans are getting away from the original altruistic purpose of assisting persons of limited means to secure necessary hospital service and are being used as devices to fill vacant hospital beds and augment hospital income.

A post-payment plan for those really unable to pay their hospital bills, instead of the insurance prepayment plans, was recommended by the bureau. Medical societies in some communities have developed this kind of plan with an administration cost of about 10 per cent., it was explained, whereas the administration of group hospitalization plans costs from 12 to 40 per cent.

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There are over 400 kinds of lilacs growing in the grounds of the Arnold Arboretum, of Harvard University.

Aztec Indians of Mexico knew the poisonous black widow spider, and used an oil extracted from it in medicines.

PHYSIOLOGY

Two New Gland Hormones Affecting Sex Discovered

TWO NEW hormones, one of which brings maturity to sexually underdeveloped boys, were announced to the Association for the Study of Internal Secretions at Atlantic City.

The adrenal glands produce the new hormones, discovered by Drs. F. M. Pottenger, Jr., and D. G. Simonsen of Monrovia, Calif.

The maturing effect was discovered accidentally in the treatment of nine boys suffering from asthma. The California doctors gave an adrenal gland extract to these lads to relieve their asthma and unexpectedly found that after treatments of from three months to a year, the boys, who had all been underdeveloped sexually, all matured.

The new hormone also had a remarkable effect on a sixteen-year-old mentally retarded boy whose sexual development "was that of a new-born baby." After one month's treatment this boy's development had increased several times the original, and the boy had made a marked advance in his mental condition.

The other hormone, when tried in rats, made males more virile but caused the sex glands of females to shrink and waste away.

Cortin Helps Chronic Tiredness

Patients suffering from chronic tiredness, weakness, low blood pressure, vague digestive troubles, and minor but persistent nervous complaints were very much improved by treatment with another adrenal gland hormone, Drs. E. S. Gordon, M. S. Kimble, and E. L. Sevringhaus of the University of Wisconsin Medical School reported. The addition of from two to four teaspoonfuls of table salt to the daily diet added to the improvement brought about by the hormone treatment.

The hormone used for these patients is the recently discovered cortical hormone, sometimes called cortin, which makes life possible for Addison's disease patients, as insulin does for diabetics. The Wisconsin scientists emphasized that their work showed that other patients besides those suffering from Addison's disease are benefited and enabled to lead useful lives when given this hormone treatment.

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The amount of steel in use in the United States is over a billion tons, for the first time in the country's history.