

gist) is considerably higher than that for the recruiting grades of chemists and technical officers in these departments, which is £275—£18—£455 (efficiency

bar)—£25—£580. In the latter case, however, a few selected officers are allowed an extended maximum of £680.

DISCUSSION

CONSERVATION OF THE PREHISTORIC REMAINS OF NEBRASKA

A RESOLUTION has recently been adopted by both houses of the Nebraska legislature to conserve the scientifically very valuable deposits of fossil and other prehistoric remains which occur in the state. This is not to be construed as an unfriendly move on the part of the sponsors of this act. The Nebraska Geological Survey welcomes serious scientific study and research within the state by all persons and institutions who seriously desire to investigate and collect for purely scientific purposes. There is no intention to restrict or curtail the collection of materials by properly accredited representatives of educational institutions and museums. It is hoped that this act will encourage greater cooperation and more complete understanding between scientists from without the state, who come to Nebraska, and the personnel of the Nebraska Geological Survey, the Nebraska State Museum, and other properly constituted staffs of scientists within the state. Persons or institutions who desire to collect in Nebraska should make contact with the state geologist or an authorized representative of the Nebraska State Geological Survey. No set of specific regulations are at present contemplated and such may not be found necessary, if all persons concerned cooperate to the fullest extent.

It is hoped that this act will discourage and prevent the commercial exploitation of all kinds of prehistoric remains by citizens of the state and other persons from without. Also, it is desirable to prevent the unskilled digging of fossils, *et cetera*, by untrained persons, and the exploitation of valuable deposits by any one whose motives may not be strictly scientific or whose activity may not result in the greatest possible scientific use of the materials. Amateur local collectors are not to be discouraged in their pursuit of scientific information, but museum directors, to whom collections from Nebraska are offered for sale, are advised to communicate with the state geologist regarding the status of the collector and whether authorization has been issued permitting such disposal of materials. It is hoped that all collectors and parties will fully regard the prior claims that other collectors may have, by right of discovery or by grant by other discoverers, to sites and quarries, which have been opened up in previous seasons. Greater agreement on problems of paleontology and stratigraphy will be possible now than in the past, if all geologists, paleontologists and archeologists working in Nebraska will fully co-

operate with the Nebraska State Geological Survey in the spirit of the resolution which is given in full below:

RESOLUTION REGARDING THE CONSERVATION OF NEBRASKA'S FOSSIL AND OTHER PREHISTORIC REMAINS

PREAMBLE

Resolved:

That WHEREAS, the State of Nebraska has within its borders extensive geologic formations and other deposits containing fossil and other prehistoric remains of great scientific value, and

WHEREAS, the unskilled exploitation of these resources, by untrained workers, has resulted in the destruction of much fine material, and the permanent damage to many of the best deposits,

Therefore, authority is hereby given to the Nebraska State Geological Survey of the Conservation and Survey Division of the University of Nebraska, to regulate and control the collection of such materials within the borders of the State, and to take such steps as may be necessary under its police power, already granted, to conserve these deposits for Nebraska, and to prevent the unscrupulous exploitation of the same by collectors from without the State.

The above resolution was introduced and adopted by the Nebraska House of Representatives on the 14th day of May, 1935, and it was introduced in the Nebraska Senate on May 20 and adopted on May 24, 1935, and has been officially certified by the Chief Clerks of both houses.

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"YELLOW WATER" IN LA JOLLA BAY IN 1935

IN the last week of July and the first week of August, 1935, a case of "yellow water" occurred in La Jolla Bay, near San Diego, California. When first noticed on or about July 27 the discoloration amounted to no more than a greenish yellow tinge to the water where sufficient numbers of causative organisms were caught in the surface films of the sea and of air or gas bubbles concentrated by breaking wavelets.

On July 30 the color was much more prominent and there were spots in which the wavelets had thrown it into frothy streaks, some narrow and others a foot or a yard in width, with colors varying from delicate olive-green-yellow outside the froth to bright yellow-

green in some of the froth traces. A pretty shade of lemon yellow was frequently visible from the pier of the Scripps Institution of Oceanography.

The color reached its greatest prominence, both as to apparent density and as to width of streaks on August 7, but it had attracted considerable attention at the La Jolla Beach Club on July 30, the bathers complaining that the water was covered with oil. At that time, in response to a request of the club management I made a direct examination of conditions at their beach, which showed that considerable areas in and near the surf did have an oily appearance to the eye, although samples of the water did not have an oily feeling. On the wet sand, receding breakers left rows of yellowish material, one to six inches wide and sometimes a quarter inch deep, which consisted of "pure cultures" of the organisms concerned.

Careful microscopic examination of samples from the water as well as from the sand showed the condition of "pure culture" to be general. No one at the Scripps Institution has been able to identify the organism, beyond showing that it was a true flagellate possessing four flagella. All specimens appeared to be very lively, dancing about in the surface film of bubbles or in the water with a movement much like "Brownian movement." As might be expected, the color of individuals was very slight, with yellow a little more prominent than green. The shape was about like that of a flat, neckless flask and the dimensions were about six thousandths of a millimeter in length by four in width.

Following the peak of abundance of the yellowish organisms on August 7 complaints began to be heard of bad odor in sea water, especially after most of the yellow color had been displaced on the beaches by one of very light brown in the traces of foam. Special examination of the brownish material showed the almost exclusive prevalence of a nearly colorless flagellate organism much larger than its predecessor, mostly three or four times as long. Its shape and action were also distinctly different. The form was more like that of a common potato, and the swimming action was very swift, though spasmodic, much like that of certain flagellates often found in stagnant or foul water on land. No satisfying identification was found for it.

Aside from the questions concerning its identity and its taxonomic relationships, the most remarkable points concerning this occurrence of "yellow water" were the exceptionally small size of the flagellate and the absence of all other plankton organisms. In the several cases of "red water" in the La Jolla region mentioned by me in *SCIENCE* for July 7, 1933, many other kinds of organisms were associated with the one causing the color. In this 1935 case of "yellow water" fishes near the pier seemed to be entirely indifferent to

the condition, and no harm to sedentary animals was noticed.

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GROWTH PROMOTING EFFECT OF FLAVINE ON THE CHICK

ELVEHJEM and Koehn¹ have recently demonstrated that flavine is powerless to prevent a pellagra-like syndrome in chicks caused by feeding a heated diet of yellow corn meal, 58 per cent.; wheat middlings, 25 per cent.; commercial casein, 12 per cent.; supplemented with salts and cod liver oil. The syndrome was prevented by the filtrate from liver extract after the flavines were removed by adsorption on fuller's earth.

We have repeated and confirmed these results. We found that our fuller's earth adsorbate, containing flavine, failed to alleviate symptoms or to restore growth in chicks on the heated diet. The filtrate cured the syndrome.

In addition, chicks were fed an unheated diet of the same composition, except that purified casein replaced commercial casein. Slow growth took place. The growth was markedly accelerated by the addition of our fuller's earth adsorbate to the diet.

Thus it has been demonstrated that in liver extract there are present two water-soluble factors which promote growth in the chick. The first of these is the factor of Elvehjem and Koehn, which promotes growth when added to a heated diet of yellow corn meal, wheat middlings and commercial casein, supplemented with salts and cod liver oil. The second factor is flavine, which has no effect when added to this diet, but which promotes growth when added to an unheated diet of yellow corn meal, wheat middlings and purified casein, supplemented with salts and cod liver oil. The two factors are distinct from vitamin B (B₁). Growth promotion in chicks has also been obtained with crystalline flavine (vitamin G), prepared as described by Lepkovsky, Popper and Evans.²

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A NEW VARIETY OF BLACK LOCUST

IN New England, New Jersey, and especially on the northern and western portions of Long Island, there has been noted a variety of *Robinia pseudoacacia* L. that differs decidedly from the common types so widely spread over eastern and central North America. Because of its especially straight form of growth and its adaptability for planting in erosion control work

¹ *Jour. Biol. Chem.*, 108: 709, 1935.

² *Jour. Biol. Chem.*, 109: liv, 1935.