subjected to dry distillation, definitely negatives the hypothesis of the presence of so-called "gelosic" substances in coking coals.

It will be clear to the reader from the statements made above that the best coking coals are purely woody in their origin. Coking coals of less value for metallurgical purposes may contain a greater or less amount of spore material, and their grade depends on the proportion of such material. From the large amount of charred wood scattered throughout the structure of Pocahontas and Connelsville coals, it may be reasonably inferred that they represent transport material laid down in open water, and in this respect are similar to other bituminous coals in their mode of origin.

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SEEDS OR TUBERS OF AQUATIC PLANTS

DR. HUGO GLUCK, of Heidelberg, Germany, the authority on aquatic plants, appealed to the writer last year for help in securing seeds or tubers of certain native American aquatics in order that he might pursue his studies and complete the monumental work on which he is now engaged.

The writer was able last fall to secure for Dr. Glück only a few seeds and tubers, and hopes through this announcement to reach a wider circle of collectors and others who may have an opportunity to collect seeds and tubers of aquatics, and who may be willing to assist Dr. Glück in this way. The writer will be glad to send to any one interested a copy of the list of species which Dr. Glück desires and to forward any material that may be sent in for him.

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THE STIMULATION OF GASTRIC SECRETION BY HISTAMINE

IN 1920, Keeton, Koch and Luckhardt[1] demonstrated that gastric secretion of Pavlov pouch animals was stimulated by the subcutaneous injection of from 0.5 to 1.0 mg of histamine. Matheson and Ammon[2] have recently confirmed the above findings for man.

In the course of our studies on the genesis of the chemical secretion of gastric juice, we have made observations on the effect of histamine administered via the gastro-intestinal tract.

Our first observations were made on dogs having a Pavlov pouch and a Thiery fistula of the duodenum and jejunum; so that various substances could be applied to the mucosa of the intestine and their effect on the secretion of gastric juice be ascertained. When 100 cubic centimeters of 1 to 1,000 solution of histamine was applied continuously for 20 or 30 minutes to the mucosa of the Thiery fistula, as much secretion of the Pavlov pouch occurred during the hour following the application as was observed to occur in our animals during the second or third hours after the ingestion of a test meal of meat. We next administered to Pavlov pouch dogs by means of stomach tube doses of histamine varying from 50 to 150 mg dissolved in twenty cubic centimeters of water. We observed that 50 mg was just sufficient to provoke a secretion of gastric juice from the Pavlov pouch, while 150 mg provoked a secretion quantitatively and qualitatively equivalent to that excited by a meal of meat.

Such doses of histamine when administered by the gastro-intestinal tract, although comparatively very large, produce no toxic symptoms, as judged from the behavior of the animal.

When 200 mg of histamine are administered by stomach tube to man (only one man has been experimented on up to date), a definite stimulation of gastric secretion results and no symptoms are experienced.

We believe that these observations very probably have a direct bearing on the problem of the chemical secretion of gastric juice, since Koessler and Hanke[3] have recently reported that histidine is decarboxylated almost consistently in the intestinal tract to histamine, which is normally present in the intestinal tract of man.

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MEDICAL LICENSURE OF NON-MEDICAL DOCTORS

To the Editor of SCIENCE:

It is possible that my timely warning to non-medical doctors and other parties at interest (SCIENCE, August 3) may be deprived of some of its force by Dr. Woodward's subsequent objections to it (SCIENCE, September 14), if nothing further is written about the matter. He has made a mistake in calling the warning, "an attack on the medical profession." He would not have asserted, as he has, that certain papers appearing July 7 and July 14 were available to me, had he known that my manuscript was in your hands April 22. His fear that your readers were misled by my signature is not well founded; your readers know

[1] Keeton, Koch and Luckhardt: *Am. Journ. Physiol.*, 1920, li, 454.

[2] Matheson and Ammon: *Lancet*, 1923, i (cciv), 482.

[3] Koessler and Hanke: *Journ. A. M. A.*, 1923, lxxx, 1728.

that national societies address their own members through their own journals.

In so far as my note on medical licensure of non-medical doctors offends the medical profession, it does so because the facts therein set forth are *per se* offensive. That is incidental. It was an important object I had in mind. That object was to warn the non-medical doctors and other parties at interest in all of the States to watch their legislatures. This warning will bear repetition.

No one can deny the existence of House Bill No. 348, upon which my warning rests. No one who is informed can deny that this bill was backed by certain groups of physicians. No one can deny what the wording of the bill meant. Some of us discussed this with lawyers and also entered into conference with physicians here in Philadelphia. In these conferences it was found impossible to get the physicians to agree to a re-wording that would be mutually satisfactory. When the physicians who were conferring upon the bill here in Philadelphia finally (at a conference I attended) passed a motion to drop the bill, it appears that the physicians in Pittsburgh who were similarly interested in the bill refused to drop the bill. The bill had to be "killed in Committee" (in the House of Representatives). Possibly no one who read my paper knew that the effective quotations were from the pen of the physician who acted as chairman at the conferences I know about in Philadelphia and who spent time upon the re-wording of the bill itself. Had Dr. Woodward known this he would not have asserted that these quotations represented *merely* the views of individuals.

Who called into being this committee of physicians in Philadelphia, and who advised them? Who wrote the bill? It was legally unnecessary. It was needlessly offensive. It was thoroughly un-American. The men who did these things should ponder Dr. Woodward's well chosen words: "It would be unfortunate, indeed, if indiscreet utterances on the part of any one should hinder the movement. . . ." But if Dr. Woodward meant me, I do not think his remark fits. My warning has probably hastened the advance of the movement by bringing the matter well out into the open and by purging it (let us hope) of certain intolerable features.

Legislatures have to be watched. Witness the passage of a law in one of the States forbidding the teaching of evolution. If this be taken as an example of a response to a misguided majority, then my warning gains force. For we found that the number of physicans in Pennsylvania alone is about the same as the total number of chemists who are members of the largest association of chemists in the United States. Those of us who are not physicians must have ready other arguments than that of the wish of the majority when this matter comes into the several Legislatures. My warning note in your columns is certainly timely; it contains facts that will bear the closest scrutiny; and it is not intentionally offensive.

DAVID WILBUR HORN
Chairman, Committee on Legislation, Philadelphia Section of the American Chemical Society

QUOTATIONS

SCIENCE IN THE MAKING

AT Liverpool yesterday there came to an end a meeting of the British Association that will long be remembered as a definite stage in the making of knowledge. This annual congress of science has two chief functions—propaganda to the public and the advancement of knowledge. The face turned to the public was respectable enough. As usual, some of the more distinguished lights, and perhaps the greater part of the minor speakers, showed little talent for public speaking. They entangled themselves in the threads of their own arguments, like dancers in the colored ribbons of a carnival, turned their illustrations into obscurities, or took so long in saying that their time was too short that it left them time for little else. It is not ungracious to insist on a defect that could be remedied by taking pains; oratory is not required, but only a careful and orderly presentment of the subject such as most of the foreign guests, even those who had to grapple with an alien tongue, contrived to exhibit, in marked contrast with the body of our native speakers. There were, moreover, a few contributions that did not add to the dignity or to the effectiveness of the meeting. It may be difficult for a polite chairman to suppress speakers who are plainly in quest of self-advertisement, but there are committees with the function of accepting or rejecting proffered formal communications, and the council would do well to remind some of these of their duties. But in the proceedings generally there was more than sufficient to persuade laymen that science had a living spirit and was a high stimulus to the mind as well as a rich provider of material advantages. From these points of view the less formal addresses to members of the association and others in Liverpool and to citizens in adjacent towns deserved unusual commendation.

The internal work of the sections, the actual congress of those engaged in research, can not be judged by the public attention it received, perhaps, indeed, might be estimated more correctly in inverse proportion to the possibility of reporting it in a form of interest to the general reader. Even such sections as geography, anthropology, economic science, psychology, education and agriculture, apt to attract communications which sit uneasily in the category of science, also accomplished some useful work and gave real students the opportunity of distinguishing between opinion and knowledge. The geologists, ably led by their president, whose address was a model of