longed to that group of great men mentioned by Professor Robinson, composed of Longfellow, Norton, Agassiz, James Russell Lowell and Oliver Wendell Holmes. It was my good fortune within a year or two of my meeting with Asa Gray to meet all these worthies. I greatly appreciate the tribute paid to Asa Gray by Professor Robinson.

H. W. WILEY

QUOTATIONS

INTELLECTUAL LEADERSHIP OF THE TIMES, THE POST AND THE TRANSCRIPT

Wireless to the New York Times, August 26, and printed on the front page.

PROFESSOR CHARLES HENRY of the Sorbonne [Minerva does not record a Professor Charles Henry at the Sorbonne or elsewhere], one of the leading mathematicians of France, declared that he had proof of the scientific, mathematical certainty that "nobody dies entirely."

"That 'something' which is called a soul continues to radiate," he said, and, referring to the belief of some that when a man is dead he is dead forever, buried, finished and not to be talked of any more, he continued:

"What a mistake is theirs! In order to recognize their error it is necessary only to carry out certain experiments accessible to anybody knowing how to manipulate the essential apparatus 'ad hoc.' The apparatus exists."

Saying religions had sought to explain the phenomenon of death and to promise the infinite prolongation of life, Professor Henry went on:

"But I have acquired a certitude, and that by purely scientific methods, that the originators of these religions were in reality the precursors of science possessed by intuition of the truth.

"Among scientists there are means for measuring the radiation of all substances—for every substance body emanates radiation. Your lamp, your stove, your cherry tree are warmed by the sun's rays.

"Calculate that radiation which is due to heat, due to electro-magnetic elements and due to the attraction of our globe. If you make the calculations conscientiously you will with anguished surprise find yourself up against something unknown, some force which is neither one nor the other of these."

Associated Press dispatch printed on the front page of the New York Evening Post, August 21.

Sound waves from a human brain have been picked up by a radio receiver on a four to ten meter wave length.

The experiment is described by Professor Ferdinando Cazzamali [Minerva does not record a Professor Cazzamali at Milan or elsewhere], heard of the department of neurology and psychiatry at the University of Milan, in an article prepared for the forthcoming issue of *Revue de Metphysique.*

As a result Professor Cazzamali foresees the transmission of sound waves from one brain to another.

He says he operated with highly excited persons or those suffering from nervous diseases as well as the noted Italian medium, Signora Maggi. The patient was shut up in a perfectly insulated cabinet.

The sounds he heard through the receiver ranged from signals akin to ordinary wireless signals to whistling and soft violin or cello notes.

Similar results were obtained, he declares, from persons under hypnosis. In every case, however, the emanations stopped when the subject resumed a normal and peaceful frame of mind.

From an editorial article in the Boston Evening Transcript, August 21.

Science has performed so many wonders that it sometimes presumes on achievement that is far beyond its reach. But fundamentally there seems to be no fact that militates against the Milan professor's theory, to say the least. That the "wave theory" governs or applies to the nervous impulses, or the cerebral control over the nervous centers, is altogether likely. What may eventually be done in the way of measuring, determining or controlling the "waves" of the brain no one can say in the present state of knowledge.

The suggestion that the brain impulses may thus be harnessed and coded like wireless telegraphy is a startling one. It seems to foreshadow not only a wonderful means of communication, but also the removal of the veil that hangs in front of the operations of the human mind. Conceivably it projects our race into a Palace of Truth, where each individual may read the thoughts of his neighbor. It unfolds to our gaze a rather uncomfortable world. It seems to make a goldfish in a globe out of every human being. Somehow one rather hopes that the complete development of Professor Cazzamali's discovery—if there is anything in it—will be left to the next generation.

SCIENTIFIC BOOKS

Medicine, An Historical Outline. By MAJOR M. G. SEELIG. Baltimore: Williams and Wilkins.

A CHARMINGLY characteristic foreword by Lieutenant Colonel F. H. Garrison precedes this work of Seelig's, which consists of eight lectures which were delivered at the Washington University in St. Louis.

These discourses were given with the aim of interesting the senior students of the medical school in the all-important but very much neglected subject of the history of medicine. With this as their aim it is quite sure they succeeded and it is indeed gratifying that there is an ever-increasing number of publications dealing with the past of this noble profession of medicine. The book is most readable and is well illustrated with forty-eight half tones, portraits of some of the masters of medicine. It could hardly fail to awaken the student unless he were entirely anesthetic to the subject.

Unfortunately Major Seelig did not go over his manuscript very carefully before publishing it, else he had not allowed so many errors to remain. The dates of the founding of the various universities are not in accord with the best authorities and the school of Salerno is referred to as a university. John Locke is placed in with the lights of the eighteenth century, when his dates are 1632–1704. Glibly he speaks of a group of English surgeons of the early nineteenth century as being familiar to American surgeons and almost of yesteryear. It would be interesting to know how many American surgeons could tell what Aston Key, Benjamin Travers, William Ferguson and James Wardrop did. They might make out better with the remainder of those mentioned—Astley Cooper, John Bell, James Syme, Robert Liston and Benjamin Brodie.

As we remarked before, the aim of the lectures is to be commended and those who listened to them of course caught the inspiration which was what was intended, but before being put into cold type they should have had careful revision.

JOHN RUHRÄH

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

THE PRODUCTION OF PURE ABSOLUTE ALCOHOL WITH CALCIUM CARBIDE AND ANHYDROUS COPPER SULPHATE

EACH of the best known of the various processes, as described in the literature[1-8] for producing absolute alcohol on a laboratory scale from 94 to 95 per cent. alcohol presents one or more disadvantages, namely, expense of materials, time consumed, low yield or poor quality of product.

The use of calcium carbide as an alcohol dehydrating agent was proposed by Yvon.[2] Approximately the first third of the distillate obtained under the conditions given contained acetylene. Ostermayer[2] reports the successful production of absolute alcohol by the Yvon procedure, but emphasizes the difficult removal of the bad odor and taste of the distillate, due to organic sulphur compounds. These objectionable characteristics of the 100 per cent. alcohol so obtained have discouraged or prevented the use of calcium carbide as an alcohol dehydrating agent.

The authors have made an experimental study of the operation for the purpose of increasing the yield of 100 per cent. alcohol, reducing both the time and the quantity of carbide, and finding satisfactory means of removing the acetylene, organic sulphur and phosphorus compounds which are retained by alcohol when treated as Yvon directs.

The data from the following experiment will indicate the procedure and the conditions found most satisfactory:

Experiment III: To 100 gr. (92.34 wt. per cent., 95.02 vol. per cent., alcohol, contained in a flask attached to a reflux condenser, were added 17.5 gr. of granular, −20 mesh, calcium carbide (81.1 per cent. pure CaC_2). The alcohol was maintained at boiling temperature on a water bath for thirty minutes, then 0.5–1.0 gr. of anhydrous copper sulphate was added, to engage the dissolved acetylene and sulphur compounds. Boiling under the reflux condenser was continued for fifteen minutes and the alcohol then distilled off.

Total distillate = 93.74 gr. or 98.66 per cent. of the theoretical yield. The specific gravity at 15 degrees C. = .7945 or 99.86 vol. per cent. alcohol, of normal odor and taste, and negative to tests for acetylene with Cu_2Cl_2, sulphur compounds, aldehyde and free acid.

Qualitative tests for water in the alcoholic distillates were made with anhydrous copper sulphate, crystalline potassium permanganate and calcium carbide to determine the comparative delicacy of the reagents.

Anhydrous $CuSO_4$ is not nearly so delicate nor is a positive reaction as quickly obtained with it as with either of the other two. Potassium permanganate crystals showed faint pink after five minutes in 99.57 per cent alcohol—no color in 99.63 alcohol.

[1] Mendeleeff, Ann. Phys. Chem. 1869, ii, 138, 230.

[2] Yvon, Compt. rend. 1897, 125, 1881–2. Ostermayer, C. Bl. 1898, I. 658. Pharm. Ztg. 43, 99 9/2.

[3] Kailan, Monatsch. 1907, 28, 927.

[4] Winkler, Ber. 1905, 38, 3612–16.

[5] Plucker, Zeit. Nahr u. Genussm. 1919, 17, 454–8.

[6] Pozzi, Escat. Bull. Assoc. Chim. Sucr. Dict. 1909, 26, 580.

[7] Chavanne, Bull. Soc. Chim. Belg. 1813, 27, 205.

[8] Young, Trans. Chem. Soc. 1902, 81, 707 and 717.