ine people are using in their advertisements a sentence from a letter from Dr. Wiley. Here is the sentence:

"We are well conversant with the fact that Acetanilid, when properly used, is a most valuable remedy, but its indiscriminate use in the hands of the laity undoubtedly does great harm in many cases."

Those who know Dr. Wiley know that he looks on these acetanilid mixtures as among the most dangerous "patent medicines" on the market, and on orangeine as a typical example of the dangerous ones. Dr. Wiley appreciates, and so do others who know anything about the subject, that the rest of the stuff in the mixture called orangeine—and, for that matter, in all the acetanilid mixtures, whether "patent medicines" or those exploited as "ethical proprietaries"—is both harmless and useless. It is simply a blind to humbug and mislead the public.

Death from Koehler's Headache Powders.—Dr. P. Loewenthal, New York City, reports the death of a man in an hour and a half after taking two of Koehler's headache powders. The coroner's jury returned the following verdict:

The said James Tobias came to his death on the 2d day of September, 1906, at 1187 Lexington avenue, by acetanilid poisoning, administered at the time and place aforesaid in Koehler's headache powders, purchased at drug store of P. Jaffe, 1133 Lexington ave.

Chemist C. P. O'Conner made an analysis of a sample powder and reported it to be "made up of acetanilid."

The analysis of this nostrum, made under the direction of the Council on Pharmacy and Chemistry, was published in *THE JOURNAL*, June 3, 1905, page 1791. According to this analysis, Koehler's headache powders contain approximately: Acetanilid 76 per cent., and caffeine 22 per cent.

Death from Chamberlain's Colic, Cholera and Diarrhea Remedy.

Dr. W. C. Fulkerson, Marshall, Okla., reports a death from Chamberlain's Colic, Cholera and Diarrhea Remedy self-administered. He states that according to the formula, which is now published under the Food and Drugs Act, the remedy contains 6 grains of opium to the ounce.

"An Impudent Instruction."

It is a pleasure to quote the following, from the *Humboldt Times* (Eureka, Cal.), as another evidence that the "patent medicine" men have not their grip on all the newspapers of the country:

"Since the time of the legislature's convening the manufacturers of proprietary medicines have flooded the mails addressed to the newspapers of California with appeals to 'use their influence' in connection with certain proposed legislation, affecting drugs, under consideration at Sacramento. It is to be presumed that prepared editorials supporting the policies favored by the 'patent medicine' companies have been forwarded to some newspapers; for certain journals have recently appeared with editorials exactly in line with the arguments and appeals advanced by these interests.

"The *Times* has not been altogether exempt from the approaches of these medicine makers, who evidently consider that their advertising patronage entitles them to dictate newspaper policy. Most of the communications received have been simple requests, and have been ignored; but one medicine company has presumed too far, as the text following will show.

"The *Times* does not know the merits of the arguments advanced by the medicine manufacturers, but it does know that the patronage of the medicine companies does not and will not influence the paper's policy, or in any manner affect the private or public actions of its management.

"In this connection, the *Times* takes the liberty of setting forth a telegram which it received Wednesday, and the reply it forwarded, the same being as follows:

LETTER BY THE "TIMES."

EUREKA, CAL., Feb. 13, 1907.

Miles Medicine Co., Elkhart, Ind.:

Gentlemen:—I am this day in receipt of a telegram from you, reading as follows:

"Senate Bill Thirty, similar to National Law, satisfactory House Bill 531 has been amended by adding digitalis, nitroglycerin or other poisonous drug. These bills have both passed and will be harmonized in conference. Use your influence with representatives and senator to support Senate Bill Thirty, uniform with National Law."

In reply to the above telegram, which I consider impudent and insolent in the extreme, I will state that it is not the intention of the *Humboldt Times* or its management to have anything to do with attempts to influence the action of Humboldt County's legislators regarding "patent medicine" legislation. The *Times* believes

that the Humboldt legislators will do, in this matter, what to them appears advisable and proper, in the public interest.

Several patent medicine companies have requested this office to "exert its influence" in connection with medical legislation. I have not deemed it necessary to reply to the same; but your arrogant command calls for a reply, and I deem this a proper and excellent time to advise you that under its present management the *Times* will frame its own policy and dictate its own action relative to public affairs, in accordance with what it believes to be consonant with the public welfare.

If this reply seems to you an improper one; if you are under the mistaken impression that your advertising patronage, for which you are getting large returns, gives you the privilege of issuing orders to the management of this paper, then you are respectfully advised to terminate your contract and withdraw your business from the *Times*. This paper is anxious to carry a large volume of advertising, but only on a strict, legitimate, business basis. I might also notify you at this time that the *Times* intends to give its preference to the advertising business of Humboldt and Eureka business men.

I anticipate that you will be considerate enough to offer an apology for the offense you have given, and I expect you will state in explanation that it is the habit of many editors and managers to take such orders as you unsuccessfully have attempted to issue to me. I regretfully confess that perhaps the average newspapers are weak enough to encourage you in your bad habit; but you will please consider that the *Times* is conducted on a higher plane of journalism. Very respectfully,

WILL H. FISCHER.
Manager *Humboldt Times*."

Correspondence

"Starch Sugar as a Food Adulterant."

CHICAGO, Feb. 19, 1907.

To the Editor:—In *THE JOURNAL*, January 26, appeared an article by Prof. Henry Leffmann, entitled "Starch Sugar (Glucose and Grape Sugar) as a Food Adulterant." The statements contained therein are in many instances misleading and so out of accord with the facts as to call for a correction of at least the principal features. Sulphuric acid is not employed in the manufacture of American glucose and grape sugar. It is surprising that Professor Leffmann is not better informed on this point, particularly as information can easily be obtained. This misstatement affords him the means of casting reflection on the wholesomeness of starch sugar and glucose, and makes it possible for him to cite the case of an extensive poisoning in England a few years ago by arsenical glucose, where the contamination by arsenic was due solely to the sulphuric acid employed in converting the starch material. At the times of this arsenic poisoning, Dr. Wiley conducted a thorough investigation and proved that American glucose could in no way be connected with this incident. This was corroborated by Professor Chandler of Columbia College in his presidential address before the Society of Chemical Industry, at its London meeting. Leffmann states that, "apart from some limited special applications, for which it is alone suitable, commercial glucose and grape sugar are almost entirely employed as adulterants and substitutes for natural carbohydrates." As regards the last part of this statement, it will not be disputed that a substitute may have the same food value as the material which it replaces. This applies particularly to grape sugar and cane sugar, as the caloric units of both are practically the same.

Let us now consider for a moment the principal uses to which glucose is put. The largest consumption of glucose or "corn syrup" is found in table syrups, glucose in this case being blended with cane syrup, refiners' syrup, molasses or sorghum. Such syrups are sold under their correct names, to-wit: "Corn syrup with cane flavor," "Corn syrup and molasses," "Corn syrup and sorghum," etc. It can not be said, therefore, that in this instance glucose is employed as an adulterant, nor is it employed as "a substitute for natural carbohydrates," for the sales of corn syrups outnumber those of cane syrups almost tenfold. Glucose is also largely employed in candies. When the United States committee on food standards prepared the standards for candies, special attention was given to glucose, and in the definition for candy, as finally adopted, the use of any saccharine substance was sanctioned. Another large market for glucose is found in the preserve business, the glucose in this case being employed not to lower the cost of the product, but to improve its quality. As to the use of grape sugar in fermented products, wines produced in Missouri, Ohio, and the eastern states require the addition of some kind of sugar, because the grapes, on account of the climatic conditions, do not contain

as much saccharine matter as in other more favored localities, as, for instance, California. The preference is given to grape sugar over cane sugar, not because of the difference in price, but because of its superior merits. As to grape sugar in beer, it is acknowledged that ale beers with keeping qualities can not be produced without the use of sugar, and again the preference is given to grape sugar.

Leffmann directs his principal criticism towards the report rendered in 1884 by a committee appointed by the National Academy of Sciences for the purpose of making an investigation of the purity and wholesomeness of glucose. This committee consisted of Professors Barker of the University of Pennsylvania, Brewer of Yale, Chandler of Columbia College, Gibbs of Harvard, and Remsen of Johns-Hopkins, and it is reported that "starch sugar thus made and sent into commerce is of exceptional purity and uniformity of composition, and contains no injurious substances," and "though having at best only about two-thirds the sweetening power of cane sugar, yet starch sugar is in no way inferior to cane sugar in healthfulness, there being no evidence before the committee that maize starch sugar, either in its normal condition or fermented, has any deleterious effect on the system, even when taken in large quantities." Leffmann finds fault with these investigations because they "were entirely insufficient according to modern standards of physiologic inquiry." He mitigates this rather severe criticism by stating: "This does not reflect on the ability of the members of the committee. They proceeded according to the light available at that time." In answer thereto we may state that in 1894, ten years after the original investigation had been conducted, these same scientists went on record as entertaining the same views as in 1884, and that, if anything, their belief in glucose had been strengthened.

Of expressions in favor of glucose of more recent date we may quote the following: Dr. William Murrell of England, in the *Medical Press and Circular*, May 1, 1901: "Commercial glucose is not only a food but a most excellent food." Dr. Wiley stated at the times his testimony was taken before Senator Mason, in connection with the establishment of a national food law that "the series of foods, known as glucose or grape sugar, when properly made, are valuable food materials and not injurious." And again Dr. Wiley at a meeting of the Philadelphia Retail Grocers' Association, Feb. 15, 1906: "I am a friend of glucose and of every healthful food product."

To substantiate his criticism against glucose Dr. Leffmann cites the "revelations brought about by the prosecutions recently undertaken by Dr. Warren, dairy and food commissioner of Pennsylvania," according to which glucose was contaminated in many cases with appreciable amounts of sulphuric acid. This statement is wholly erroneous. The investigations of Dr. Warren in Philadelphia showed a large amount of cheap candies to contain sulphites. The presence of sulphites was attributed to the glucose employed in the preparation of these candies, although it was generally known that it was a common practice among some confectioners to use sulphite preparations in the manufacture of their candies, and this accounted for the relatively large amount of sulphites found. It has never been denied that the brand of glucose, known as "Confectioners' glucose," which was sold to confectioners only, contained small amounts of sulphites, but these were considered unobjectionable because the sulphurous acid was supposed to be given off entirely at the high temperatures employed in cooking candies. The very moment the issue was raised the management of the Corn Products Refining company discontinued the manufacture of the sulphite-containing brand, so that every pound of glucose or grape sugar sold since for food purposes is absolutely free from this ingredient. It is quite pertinent to state that there is not one case on record where the purity or wholesomeness of any of our corn syrups put up for table use was questioned, although millions of cans are sold every year throughout the country.

It remains to reply to the allegation that the company had consented to pay all the numerous fines in Pennsylvania. This statement is absolutely without foundation, the facts being that when the matter was presented to Attorney General Carson and Special Attorney McGibney, who had been employed by

Dr. Warren, for the purpose of prosecuting these cases, they both advised Commissioner Warren that he should dismiss the 250 suits pending, which was done, as the records will show.

We regret that the space allotted us does not permit of doing the subject full justice, yet we believe that from the foregoing it is evident that Professor Leffmann's statements do not appear entitled to serious consideration, as most of the data submitted by him are erroneous. He has failed to submit any proof, scientific or otherwise, which would justify his demand that the use of glucose and grape sugar in foods be restricted. On the other hand, we believe we have shown that the report made by the committee in 1884 is substantiated in every respect by later developments and investigations.

CORN PRODUCTS REFINING COMPANY.
(By T. B. Wagner, Ph. D.)

The above letter was submitted to Dr. Leffmann, who replies as follows:

PHILADELPHIA, Feb. 23, 1907.

To the Editor:—(a) All the literature that I have consulted mentions sulphuric acid as one of the principal agents in the making of glucose. I am aware that other acids have been used. The latest American work I have is Leach's "Food Inspection and Analysis." This states that "usually sulphuric acid" is employed. It is important to note that Dr. Wagner does not say what acid is used. Why this omission? His assertion that chemists can easily find out what methods are used in manufacturing operations is not correct. Chemists are usually denied admission, unless they are "orthodox" in their views of the sanitary relations of the products. If hydrochloric, oxalic, or sulphurous acid is used, the fundamental danger is not removed. Each of these is a laboratory product and liable to impurities that do not occur in natural products. Let Dr. Wagner tell us what is used and then we can judge of the degree of danger.

(b) The statement that American glucose does not involve danger from arsenical poisoning may be admitted, I think, without affecting the point I wished to make. I referred to it to show that great harm had been done. In view of the disaster it is likely that all glucose is, and will be for a long time, free from arsenic, but the discovery was not made by the chemists of the glucose-makers, and many human beings were sacrificed to the "official" confidence and approval of glucose as a substitute for malt.

(c) I do not dispute that "a substitute may have the same food value as the material which it replaces," but before the makers and users of glucose can take advantage of this dictum they must show the fact. The comparison of calories means nothing. Dextrin and cellulose have the same percentage composition as starch, but they do not have the same value as food for human beings. Mushrooms and meat extracts contain considerable nitrogen, but it is now known that neither can be ranked as equal to a standard proteid diet, having the same nitrogen ratio. A few weeks ago THE JOURNAL pointed out that a preparation of agar-agar, widely advertised as a nutritious food, is about as nourishing as so much paper-pulp, yet the calories of agar-agar are probably nearly those of starch.

(d) Dr. Wagner admits my contention that starch-sugar is principally employed as a substitute and adulterant of the natural carbohydrates. He says: "The largest consumption of glucose or corn syrup is found in table syrups." "Such syrups are sold under their correct names." Here is a monstrous misstatement. Dr. Wagner gives some so-called "correct names." Every one of them is deceptive; every one has been devised with the sole object of deceiving. The term glucose has been largely discredited; the community is suspicious of it; the term "corn syrup" has been invented to conceal the real nature of the article. The readers of THE JOURNAL are fully familiar with this trick. They all know how acetanilid is concealed to the general public under the name "phenyl-acetamid," or saccharin under the term, "benzoyl-sulphimid." Dr. Wagner says, "Glucose in this case being blended with cane syrup." I doubt very much if, with the stringent rulings now in force, under the new law, cane syrup and glucose could be considered "like" substances, to which alone the term "blend" can be applied. Certainly, not if the principles