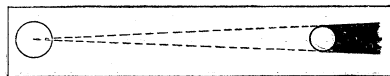
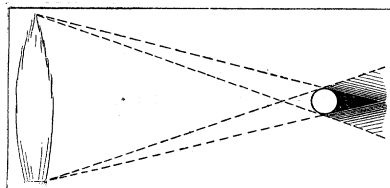


While this warming-up is in progress, the burner is covered with a sheet-iron hood, to confine the heat.

We have referred occasionally to the Manchester Ship Canal that is to make Manchester, England, a seaport. We now learn that these Wells lights are used for the night-work, and understand that their portability and large flames, rendering shadows less sharply marked, have caused them to be looked on with favor.



SHADOW FROM ARC-LIGHT.



SHADOW FROM OIL-FLAME.

The effect of the large flame of this oil-light in doing away with the black shadows which are found so objectionable when an electric arc-light is used is illustrated in the accompanying diagrams.

CERTAIN PROVISIONS OF CONTINENTAL LEGISLATION CONCERNING FOOD ADULTERATION.¹

DURING the past year I have had occasion to look up the subject of the laws and regulations now in force in European countries in reference to the sale of unwholesome or falsified foods, and believe that a brief *résumé* of certain provisions of such legislation may not be uninteresting to the members of this association.

To attempt to summarize what has been done in each country involves more or less of a review of its police administration, which would make this paper too long. Copies of these foreign laws, decrees, and regulations, and a list of our State laws on the adulteration of food and drugs, dairy products, and butter substitutes, will be found in the reports of the commissioner of internal revenue for 1888 and 1889, to which I would refer those specially interested in this subject.

In examining this mass of legislation, I was impressed with the large scope of the powers of the police authorities in continental Europe, and that there are many of these functions which our States might adopt with profit. For instance: in addition to what we consider the ordinary police duties relating to the enforcement of the laws and regulations respecting public order, the suppression of crime and violence, the supervision of the excise, of public places of amusements, etc., we find the following as being specified as part of the duties of the police administration in matters relating to public health: viz., —

(a) The registering and licensing, after previous examination by a board of experts duly appointed for that purpose, of all physicians, surgeons, accoucheurs, midwives, orthopedists, dentists, pedicures, trained nurses, and veterinarians.

(b) The registering and licensing, after suitable examination, of all pharmacists and of their assistants; also the inspection of all drug-stores, and the enforcement of rigid regulations concerning the sale of poisons.

(c) The supervision and inspection of all hospitals, whether public or private, public baths, prisons, schools, slaughter-houses, markets, stores, and other public and private establishments, in regard to their sanitary maintenance.

(d) The enforcement of all laws, and the making of all needful regulations to carry out their provisions, in regard to public health,

especially those concerning epidemic or contagious diseases of men or animals.

(e) The supervision and inspection of all articles which serve as foods, properly speaking, or as beverages, as well as those which are employed in the preparation, production, manufacture, or preservation of such foods, including the places where such articles are sold, stored, or manufactured (see the laws on sanitary police, of France, Belgium, most of the cantons of Switzerland, Germany, Italy, etc.).

It is to certain features of the laws and regulations on this last subject that I wish to call your attention. These may conveniently be divided into four heads; viz., general, special, penal, and executive provisions.

General Provisions.

The word "food" may be said to include all commodities, materials, or ingredients, of whatsoever character, intended for human consumption.

A food is considered as adulterated or falsified (a) when any substance has been added which does not exist in the normal product, or is only found there in an appreciably lower proportion; (b) when any substance has been subtracted that is normally present in the product, and which is not found in the abnormal product or only in an appreciably lower proportion; (c) when it is an imitation of, or sold under the name of, another article; and (d) when any substance has been substituted, wholly or in part, for the article.

The selling, offering for sale, or otherwise putting on the market, as well as the use, of any food commodity which is unwholesome, altered, or decomposed, is prohibited under severe penalties.

The selling and offering for sale, for the purpose of slaughtering, of animals infected with contagious and other diseases, as well as the selling and offering for sale of the meat from such diseased animals, is prohibited. Power to regulate the proper inspection before and after slaughtering is left to the competent authorities.

The employment of poisonous coloring-matters in the manufacture of clothing, wall-papers, toys, eating, drinking, and cooking utensils, and other articles of common use, as well as their use in wrappers and vessels intended for the packing or for the preservation of food, are also prohibited.

Every dealer in food commodities must be responsible for the quality of his merchandise, whether of foreign or domestic origin.

Every food material must be sold under its true name.

Every dealer having an artificial product imitating a natural product in his possession, whether the same is intended for sale or is claimed to be solely for his own use, must announce such fact by conspicuous placards in his shop. All such artificial products must be duly labelled in a conspicuous and legible manner, bearing the name of the merchandise accompanied by the prefix "artificial."

The manufacture of, trade in, and offering for sale of, substances intended for the adulteration of articles for food is forbidden or restricted to certain prescribed methods and substances by stringent regulations of the competent authorities.

The power to regulate and to supervise the methods and the means for carrying out the provisions of these laws is placed with the competent authorities.

Special Provisions.

These include clear and concise definitions of the different food-products, as well as very often an accurate statement of what shall be the minimum chemical composition of such foods or their ingredients. The latter feature, however, is, owing to the constant advance made in the methods of chemical analysis, and also, it must be said, to the shifting character of adulterants used, much better left to frequently revised regulations by competent authorities than to the precise wording of a law.

1. BUTTER AND CHEESE. — These must be made from milk or cream, or both, and with or without common salt. Any admixture of a foreign fat not derived solely from milk makes the product artificial, and it must consequently be so labelled and sold. Most of these countries have special laws on the manufacture and trade in artificial butters (see reports of the commissioner of internal revenue for 1888 and 1889).

¹ Presented at the annual meeting of the American Public Health Association, Oct. 22-25, and published by permission.

2. CONFECTIONERY. — This must only be colored with harmless materials, such as (black) chinese black; (blues) Berlin blue, indigo, litmus, Prussian blue, saffron blue, ultramarine; (brown) caramel; (greens) chlorophyll (as spinach-juice), mixtures of yellow colors with blue (a mixture of Prussian blue, Berlin blue, and Persian berries gives a green rivalling in brilliancy Schweinfurt's green); (reds) annatto, Brazil lac, carmine, carmine lac, cochineal, orseil, the juice of beets and red berries (such as cherries and currants, etc.); (yellows) Avignon berries, curcuma, fustel, marigold, Persian berries, quercitron, safflower, saffron, turmeric; chalk and the ochres. The use of substances known to be injurious to health is forbidden in this and other food commodities. Among these injurious substances are included salts of antimony, arsenic, barium, except the sulphate; bismuth, cadmium, chromium, cobalt, copper, iron, the chloride and sulphate, though most iron salts are harmless; lead, magnesium, nickel, zinc, and some of the potassium and sodium salts; oxalic acid, picric acid, cocculus indicus (Indian berry, Levant nut), picrotoxine, gamboge, aniline, aloes, eosine, fuchsine and its immediate derivatives; coloring-matters containing nitrous vapors, as naphthol yellow, victoria yellow, coloring-matters prepared with di-azo compounds.

3. DISTILLED BEVERAGES. — These (such as kirsch, brandy made from grape residue, from lees, or with juniper berries, gentian, etc.) must only bear the name of "natural" when they are produced by the fermentation and subsequent distillation of the fruit or material of which they bear the name, without any addition whatsoever. The sale of these beverages made artificially with alcohol, or increased by alcohol and other substances, is tolerated, provided the mixture contains nothing injurious to health, and is properly labelled.

4. FLOUR AND BREAD. — The sale of any flour containing ergotized grains is forbidden. The addition of any flour of an inferior value constitutes a fraud if the mixture is not specified. Wheaten flour shall be composed entirely of ground wheat, free from bran, perfectly white, or having a faint tinge of yellow; must not show red, gray, or black specks, nor possess a disagreeable odor; must contain no foreign meals, as rye, corn, barley, peas, beans, rice, linseed, buckwheat, and potato-starch; no alum to disguise the presence of damaged flour in mixtures, or to improve the appearance of an inferior grade, etc.

5. FRUITS AND VEGETABLES. — The sale of unripe or of rotten fruits or vegetables is forbidden.

6. HONEY. — Honey must consist of the saccharine substance collected by the bee (*Apis mellifica*) from the nectaries of flowers, and deposited by them in the cells of the comb. It must not contain any added starch-sugar (glucose), cane-sugar, or inverted sugar.

7. LARD. — This must be made exclusively from the rendered fat of the hog, and must not contain any foreign fats.

8. LIQUEURS. — These must be free from unwholesome materials, toxic bitter substances, fuchsine and other coloring-matters, etc.; and, as they are all artificial products, they must be duly labelled.

9. MALT LIQUORS. — These must consist of the fermented alcoholic infusion of malted barley with water, and flavored with hops. The replacement of these substances by others is considered, if these are inoffensive, as a violation of, and, in case they cause injury to health, as an offence against, the law. They must not contain antiseptics, salt (except that derived from the water used in brewing), or alkaline bi-carbonates. The beer-pumps used must be so fitted as not to produce any alteration in the beverage. The pipes must be as short as possible, and formed of pure block tin. They must be washed out every day with boiling water, and every eighth day with a solution of soda. The air used must be drawn from without, and caused to traverse a bed of pounded and sifted charcoal. The whole apparatus must be kept in a state of perfect cleanliness.

10. MEAT. — Every animal, before being slaughtered, must be inspected by a competent veterinarian, who will issue the necessary health certificate. An inspection is again made when the carcass is ready to be cut up, and before the removal of the viscera. The inspector will give a permit of sale if he considers the meat sound. Meat is considered injurious which is derived from animals (*a*)

dying from internal disease, (*b*) poisoned, (*c*) affected by a contagious disease, or (*d*) by a malady involving the decomposition of the blood; also all meats containing any parasites, as trichinæ, capable of developing in the human body, and all meats entering into putrefaction. The sale of all meat derived from a sick animal is forbidden, whether it may or may not be injurious to health. The slaughtering of calves under sixteen days old, as well as the sale of such veal, is forbidden.

11. MILK. — The sale of milk coming from sick cows is prohibited. Persons coming in contact with invalids suffering from contagious diseases should abstain from the handling of milk. The use of vessels of copper, brass, zinc, pottery poorly glazed or made with lead enamel, must be avoided. Places for storing or retailing milk should be clean, airy, and located at a distance from sleeping or sick rooms. The use of carbonate of soda, salicylic and boracic acid or their salts, as well as other materials intended as preservative agents of milk, is prohibited. The removal of cream, the addition of water, foreign fats, or coloring-matter, are considered as adulterations. Milkmen are required to mark upon their cans in an indelible manner the kind of milk they contain: (*a*) whole (pure) milk; (*b*) mixed or half-skimmed milk, resulting from the mingling of the skimmed milk with the morning's whole milk; and (*c*) skimmed milk, i.e., milk entirely without cream. In the two latter cases milkmen must notify their customers of the character of the product. A specific-gravity test at 15.5° C. (60° F.) of 1.03 is generally recognized as the minimum for pure milk, though chemical analysis is depended upon in cases of dispute.

12. SPICES AND COLONIAL PRODUCE. — These must be sold in a pure and unmixed condition.

13. TINNING. — The tinning of all copper and iron utensils used in the preparation or preservation of foods must be made with pure tin, or one containing not more than one per cent of lead. Galvanized (i.e., coated with zinc) vessels are not allowed.

14. VINEGAR. — This must be composed only of acetic acid, and must not contain any other acid, either mineral or organic.

15. WINE. — Nearly every wine-producing country in Europe has special laws on this subject, in which a sharp distinction is drawn between natural and artificial wines. A natural wine is defined as the liquid product which results from the alcoholic fermentation of the juice of fresh grapes without any addition whatsoever. Every wine which has not been made solely from the juice of fresh grapes must be sold under the denomination of "artificial wines." Artificial wines may be divided into two classes, — viz., imitation and demi-wines, — defined as follows: Artificial wines are alcoholic liquids which resemble natural wines, but which are not derived from the fermentation of unaltered grape-juice, and are made with a mixture, such as water, brandy, alcohol, glycerine, sugar, tartaric acid, cœnanthic ether, etc., to imitate wines; demi-wines are those resulting from the addition to the must or natural wine of water, sugar, alcohol, and other substances, intended to produce the taste or appearance of wine in such diluted and attenuated liquids, or made in the same manner with grape marc, already used in the preparation of must. Provisions are made for the proper branding and labelling of all vessels and packages containing wine, and for distinctive way-bills, invoices, etc., used in the shipment and the sale of wines. All wines not labelled as artificial are considered as being genuine wines, and severe penalties are imposed for violations of this provision.

Penal Provisions.

The penalties prescribed range from a small fine, to imprisonment in the house of correction or the penitentiary, with or without hard labor, for a term of years or for life, depending on the gravity of the offence.

In occupations requiring a license from the authorities, said license may be rescinded, and the offender may be deprived of the privilege of carrying on such occupation for a longer or shorter period of time, in the discretion of the court. The repetition of an offence within a year is generally punished by doubling the penalty provided for the first offence.

The selling, offering for sale, or otherwise putting on the market, of a product under a name other than that which its nature requires, although the value of the product may be the same, is con-

sidered a fraud, and so punished. Such products may be seized, confiscated, and rendered unfit for use, by the competent authorities.

Executive Provisions.

The police administrations are charged with the supervision and the execution of these laws, having power to make and enforce the necessary regulations.

There is generally a State commission of control, composed of three or more experts, appointed with the necessary police powers, to whom this subject is intrusted. They have under their directions the inspectors, veterinarians, and chemists necessary for the proper execution of the laws and regulations. The co-operation of the local police officials, whenever necessary, is obligatory.

The commission meet at least twice a year for the transaction of business. They must also make at least two inspections a year of all factories and warehouses for food.

The inspection and supervision of all establishments intended for the public preparation, manufacture, or sale of foods must be performed by the inspecting officials employed by the commission. The inspections of these establishments must take place at least twice a year, and without previous notification to the owners. Reports of such inspection are made in writing to the commission.

The inspecting officials have the right to enter any establishment within their jurisdiction during the usual business hours or when such places are open to the public, and to take for examination such samples as are necessary.

When the examination of samples cannot take place on the spot, but demands a chemical, microscopical, or similar examination, two samples must be taken, and placed under seal, by the inspecting official, in the presence of the owners or their representatives, who likewise may affix their own seals thereto. One of these samples is forwarded to the commission with a report, and a request for the proper examination thereof, and the other is retained by the inspecting official. On demand of the owner, another similarly sealed sample may be retained by him.

When there is reason to believe that a food is adulterated or unwholesome, the inspecting official may order it detained until a proper examination can be made.

If the sample proves, on examination, to be adulterated or unwholesome, the cost of said examination is paid by the offender; but otherwise the State pays the cost of the samples taken and of the examination.

All unwholesome foods are to be confiscated and destroyed without compensation to the owner.

Private individuals may have samples of food examined by the experts of the commission on complying with prescribed regulations and by paying a moderate charge, or free of charge in many countries.

EDGAR RICHARDS.

THE ANCIENT ETRUSCANS.¹

THE problem of the ethnologic position of the ancient Etruscans must be considered as yet unsolved. In spite of the prolonged labors of Corssen and Deecke, the theory that attached the Etrusci to the Indo-European stock rests on such feeble foundations that it is rejected by some of the ablest specialists in this branch; while the Turanian or Ugric origin, so vehemently advocated by Dr. Isaac Taylor, Mr. Robert Brown, jun., and others, is now dismissed as untenable by all the continental Etruscologists.

As for those other hypotheses which connect the inhabitants of Etruria with the ancient Copts, with the Israelites, with the Lydians, with the Armenians, with the Hittites, with the Celts, with the Basques, and what not, they never had enough in their favor seriously to attract the attention of scholars.

One defect in these theories has been that they were all based on one ethnic element only. Their authors seem unaware that in the present condition of ethnologic science it is insufficient to deduce conclusions from the language only, or the arts only, or the legends or the physical features only, of a nation: all these must

be taken into account where the problem is complex, and the verdict of each must be carefully weighed.

My attention was especially called to this problem while spending some months in Italy early in the present year, where I had the opportunity of seeing the many museums of Etruscan antiquities which are so intelligently preserved and displayed in that country.

I had reached the Italian shores by the most ancient travelled route from the coast of Africa; that, indeed, which was taken by the pious Æneas himself, sailing from Carthage by way of the Isle of Pantellaria to Marsala, the ancient Lilybæum.

On a clear day one is rarely out of sight of land on this crossing, for no sooner do the bold headlands on either side of ancient Carthage sink in the south-west than the volcanic cone of Pantellaria rises in sight; and when that is lost to view, the mountainous coast of southern Sicily is soon perceived. The distance between the two islands is not quite sixty English miles, — an interval of space which was not enough to offer any serious barrier to even very early ploughmen of the Mediterranean main.

I dwell on these geographic details with a purpose, as you will see later; and I mention the fact of my journey in Africa, as it was the observations I made there which first led me to the conclusions I am about to present in this paper. Part of my time had been passed on the borders of what is called "la Grande Kabylie," — that portion of the province of Algiers which is inhabited by the Kabyles, the most direct descendants of the ancient Libyans.

They are a strange people, these Kabyles, both in customs and physical aspect. Natives of Africa time out of mind, many of them present the purest type of the blonde races, — blue or gray eyes, tawny beard, fair complexion, curly light or reddish hair, muscular in build, and often tall in stature. When I came to look at the many evidently portrait busts on the tombs of the ancient Etruscans, there was something in the features, in the shape of head and face, which reminded me of these Kabyles. Slight as it was, it induced me to compare the two peoples in other details, and it is the result of this comparison which I now submit to be weighed and judged by those competent in such matters.

Etruscan remains are found in Italy from the Gulf of Salerno to the River Po, and from the Tyrrhenian Sea to the Adriatic. One inscription, indeed, has been unearthed at Verona, perhaps one near Chiavenna; and even at Chur I was shown one, in the Rætian Museum, which the curator averred had been dug up near that city. Certain it is, however, that the right bank of the Po was substantially the northern limit of Etruscan culture.

They were essentially city-builders and city-dwellers; and at the height of their power, which we may put about five or six hundred years before the Christian era, they appear to have had three federations, of twelve cities each, within the limits I have named. This statement might easily lead to an excessive idea of their numbers; but it is well ascertained that the Etruscans constituted by no means the bulk of the population. They were only the ruling class, a slave-holding aristocracy; while the large majority of the inhabitants belonged to native Italian tribes, as the Umbri, the Osci, the Ligures, and others.

All the ancient writers recognize the Etruscans as intruders on Italian soil, and they themselves are said fully to have acknowledged this, and indeed to have had certain legends as to the time and place of their first permanent settlement on the peninsula. It is only in utter defiance of these semi-historic reports that Virchow and others bring them down from the Alps, across the plains of Lombardy, through the defiles of the Apennines, and at length to the shores of the Tyrrhenian Sea. Neither the classical historians nor the Etruscans themselves knew a vestige of such a tradition. The erudite Otfried Muller, who has collected every thing to be found in Greek and Latin literature concerning them, states that it is the unanimous testimony of antiquity that the earliest Etruscans reached the western shore of Italy, crossing the sea from the south; and he adds that it is undeniable (*unleugbar*) that such was the belief of the Etruscans themselves. We know that by tradition and religious customs they assigned as their first permanent settlement the city of Tarquinii, the modern Corneto, on the shore of the Mediterranean, twelve miles north of Civita Vecchia.

¹ Abstract of a paper by Daniel G. Brinton, M.D., read before the American Philological Society, Oct. 18, 1889.