Scientific American.

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY AT
NO. 37 PARK ROW (PARK BUILDING), NEW YORK.

O. D. MUNN, S. H. WALES, A. E. BEACH.

☞ "The American News Company," Agents, 121 Nassau street, New York
☞ "The New York News Company," 8 Spruce street
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VOL. XVIII., No. 22....[NEW SERIES.].. *Twenty-third Year.*

NEW YORK, SATURDAY, MAY 30, 1868.

Contents:

(Illustrated articles are marked with an asterisk.)

THE USE AND CARE OF EDGE TOOLS.

It is said that Yankees are the most inveterate whittlers in existence, and we once heard one of our Yankee friends remark that the most valued and indispensable of his personal possessions were a pocket knife, pocket comb, and watch, with true national or natural instinct placing the knife at the head of the inventory. We say "national" instinct, because no American thinks of going without his pocket knife, which is to him a *vade mecum*, applicable to a hundred purposes and continually in demand. Yet comparatively few who consider the pocket knife a necessary adjunct seem to understand its care. It is seldom one can borrow a sharp knife from an acquaintance. It is either left as it came from the manufacturer, or has its edge rounded so its cross section is a conical wedge, or it is abraded to tenuity by the action of the coarse stone of the street grinder's machine, one of the most ruinous contrivances for sharpening knives or razors. But beside the neglect of the edge of a knife blade, the heel, which acts on the back spring, and the rivet in which the blade turns are seldom oiled, and it requires an effort not only to open a blade but also to close it.

As the pocket knife comes from the manufactory or store its edge is unfit for use; it may cut butter or cheese, possibly soft wood, but it will not pare finger nails nor sharpen lead pencils. It needs the hone and strop to produce an effective edge. And in the proper use of the hone or oil stone many are quite ignorant. First, nothing but a good oil stone is fit for sharpening a knife blade. Ordinary "whet stones," mere sand stones to be used with water, or dry, are too coarse; they are but fixed grindstones and rapidly abrade the substance of the blade without giving it an edge. The Turkish oil stone is greatly affected by some, but it is quite hard, and fit only for giving the finishing touch to very delicate tools. The Wachita, or Ouachita stone we prefer for pocket knives and for ordinary tools. The philosophy of whetting or honing is a gradual and mutual abrasion of the particles of the stone with those of the steel. The oil, with its glutinous quality, holds these commingled particles so that by the movement of the blade they act on the steel and abrade it very gradually. If the stone is too hard it quickly glazes and the blade slips over a perfectly smooth surface, producing no action on the hardened steel; if too soft, the stone allows the edge of the blade to disintegrate its surface and heap up a ridge of quartz-like or flinty particles, which produce a round or "stunt" edge, that in time must be removed by the action of the grindstone. One accustomed to sharpening knife blades can easily tell when the operation of honing is going on properly, and only experience can fully teach the process. There should be a certain feeling of resistance in the operation. The motion for whetting or honing should be circular; not as in stropping a razor, merely back and forth. The educated fingers will readily feel when the blade bears properly on the surface of the stone, and will guard against the mere abrasion of the back and the cutting in of the edge. This art can be only acquired by practice.

Few can hone a razor. Some barbers have the happy faculty, but generally it is an art little understood. The stone should be a fine Turkish stone perfectly clean and the oil used should be purified porpoise or nice sperm oil; pure olive oil is good. The blade of a razor is concave. The wedge like edge extends in its bevel but a little way back. In honing a razor the fingers should feel the back as well as the edge of the blade bearing; the back protects the edge. The motion should be the same as in honing a knife blade, circular. Few can hone a razor properly on the first trial.

In stropping razors most people fail. They will use a too yielding medium which rises suddenly as the edge passes over it and undoes what has just been done. Many turn the razor or knife blade on its edge. Unless the blade is lifted clear from the strop, just before turning, the tendency is to strop off the edge already on. A blade should be drawn from heel to point, starting at the heel and drawing it diagonally to the point, and should be always turned on its back.

Oil stones, as seen in the shops, are frequently worn concave. It is unnecessary to say that stones in this form will not produce a true edge. If the workman has not acquired skill enough to wear the stone evenly, as much at the ends as in the middle, he should occasionally grind the oil stone and reduce its surface to a level.

In the machine shop and the carpenter's shop—wherever edge tools are used—the oil stone is invaluable. It should, however, be used with discretion. If the tool is soft a short bevel should be given to the edge; if hard, it will stand a very thin edge, but the practice of producing a temporary edge by honing or whetting will not give even the best present result, and will necessitate a frequent resort to the grindstone, the office of which is only preparatory to the production of a good cutting edge.

The use of rapidly abrading substances, as fine quartz, emery, etc., is ruinous to good tools; and the continual employment of the grindstone not less so; while a judicious use of a good oil stone will keep tools in order until they are almost worn out.

START RIGHT.

In the construction of newly invented machines there is difficulty found very often in the practical application of theory. Theory generally takes in the most important principles, but it is rare that it includes all of the minor details. Delays and disappointments are the results of these deficiencies. To avoid these evils entirely is perhaps too much to expect, nor would we be so bold as to assert that it is possible so to avoid them; but by a proper method of proceeding they may be greatly lessened, and the progress of the work proportionably facilitated.

We will here give what we think to be the best mode of working out a new mechanical idea, premising that the remarks we shall make upon the subject are intended for those of our readers who are novices in invention, and to whom they may be found the means of smoothing the path which has proved to so many a path beset with thorns.

After due consideration to the general principles which underlie a new invention, and where the subject will admit of it, a mathematical demonstration of their truth, or (if that should be through the want of educational qualifications, or from the nature of the case impracticable), an experimental demonstration of them; the machine should be drawn to scale. In this drawing all the parts should be represented in section and in elevation. If the inventor has not sufficient skill to do this accurately for himself, he should make a sketch of his invention and employ a good mechanical draftsman to do it for him. The drawing of a new device accurately to scale, will generally disclose most of the practical difficulties which will be met with in applying theory to practice. If any doubt exists in the mind as to difficulty in making any adjustment for want of space in any of the parts, full allowance should be made for it in the drawing, as it will be found much better to have a little room to spare than not to have enough.

The next step is the making of the patterns, and here the experience of a good pattern maker will be found necessary, if the castings are of complicated form, more especially if they necessitate the use of cores. Very few persons not accustomed to this kind of work would be likely to make patterns which would be of any service; they would probably be totally worthless.

After the castings are obtained the machine should be finished in a workmanlike manner. If it is intended to do work that requires nicety of movement, a rude construction will only prove a useless expenditure of time and money. The expression, "It will do well enough to test the principle," is often heard from young inventors, but the truth is, more frequently, that it will *not* do well enough, and the work has all to be done over again, because of the unsatisfactory nature of the test. In all machines built for the purpose of testing a theory, it will be found to be the most economical to have the work done from the outset in the most complete manner.

These remarks are applicable to those inventions which require a working model to prove their value, and as the most important and difficult inventions are of that class, it is in their construction that an attention to the method of proceeding which we have described will be found of the greatest benefit. We assure such as are making their first efforts in invention, that we have learned the lesson we here inculcate in the "dear school of experience," and that although it may cost more in the first instance to do the work well, in the end the great economy of the course will be fully apparent.

PRESERVATION AND RESTORATION OF PAINTINGS.

Many of the finest of the old paintings were executed on panels of wood. Wood is a perishable material, and as a consequence it became in years worm eaten, or rotten, threatening the destruction of the picture, which, of course, was but a coat of paint, more or less thick, on the wood. How to preserve the painting while removing its rotten base appeared to be a problem hardly susceptible of solution; but the ingenuity of man has triumphed over what would seem to be an almost insuperable obstacle. Modern paintings are on linen canvas, almost indestructible by the lapse of time and ordinary contingencies, except from intended violence or accident. The linen wrappings of mummies, some of them over 3,000 years old, are found of good texture and sound, and the use of linen will probably be a means of preserving our modern paintings in a more perfect state for the admiration and interest of our posterity.

Paintings may be copied by skillful artists by the square inch, but if the copy is done by another hand than that of the artist himself, it loses somewhat of its original force and character; and even the painter cannot always reproduce indefinitely his original painting so that the life and freshness of the first picture shall be found in the copies. This may appear to be hardly credible, but it is an acknowledged fact well known to artists, and it will hardly appear to be strange when we consider how difficult it is for the mechanic to duplicate a machine, making it in all respects precisely like another, even with the aid of exact gages and the almost perfect operation of tools specially designed for the purpose.

The preservation, then, of original paintings becomes a matter of great consequence. When painted on panels the operation of removing the back and substituting another, either of wood or canvas, is perfectly feasible and is largely practiced by experts. It consists of securing the painting, face downward, on a table and planing the wooden back down to as near the paint as is safe, then carefully scraping with suitable tools until the paint itself is reached. When the wood is completely removed there remains a coat of paint, which is the priming and the superstrata, together forming the painting proper. A sheet of canvas, or, if preferred, a a backing of wood, is prepared with some adhesive cement and carefully placed on the back of the painting, pressed to place, and allowed to dry perfectly before the picture is lifted from its position. This process is, of course, a work of time, requiring skill, patience, and good judgment. In this country we believe it is not practiced to any great extent, but in Europe it is quite a business, and is very successfully practiced in several of the art centers of the old world.

SUAVITER IN MODO.

"Would it not have been more prudent, as well as more becoming, to have left to our readers the task of forming their own judgments upon the evidence on both sides brought before them in the course of this discussion?"

The passage which we here quote is taken from the close of an article by David Forbes, F. R. S., it being one of a series discussing "Some Points in Chemical Geology," which have been published in late numbers of *The Chemical News*. It is a caustic though we must consider it, when we take into consideration the provocations under which it was written, a very patient reply to a paper contributed to the February No. of the *Geological Magazine*, by Dr. Sterry Hunt, and also a review of Dr. Hunt's system of Chemical Geology.

Without intending to here enter into the merits of the discussion, we have thought as we have followed it during its progress, with a pleasure which has been marred by its frequent discourtesies, that other instruction might be drawn from it than was intended by either of the disputants, and the pithy words with which we have chosen to begin this article, seemed to us an excellent text from which to indite a short homily to all public or private disputants.

One of the very first of modern English essayists is Matthew Arnold, and although he has been attacked, and his opinions have been made a mark for the shafts of keenest satire, it is absolutely refreshing to witness the good humor with which he defends himself, and the modest and courteous language in which he refers to, and characterizes the opinions of his opponents. With what weapon can the armor of such a man be pierced? The vituperation and the ill natured personalities in which too many are prone to indulge, fall upon his unruffled temper like rain upon the plumage of a water fowl. It does not even create temporary discomfort, much less wound. Mr. Arnold's method of conducting a discussion is all the more admirable because it presents such a striking contrast to that which we are so often pained to notice. If the sole object of discussion is not to arrive at truth, and by comparison of views to ascertain error, it had better be avoided altogether; and no discussion should be made public which does not contain elements of instruction. Those then who assume the character of public disputants may be fairly supposed to believe that the views which they set forth are such as will throw light upon obscure points, or otherwise instruct and improve those who peruse, or listen to their arguments. They are then public teachers, and should remember that it is no part of the duty of an instructor to mix with good mental food, the bitter and nauseating gall of personal spite and animadversion.

The annals of science are, alas! too often stained with such bickerings. The scalpel of ridicule, and the microscopical examination and exposition of personal character, are too apt to usurp the place of calm investigation, and dispassionate interchange of ideas. Who can remember without pain the bitter contentions of Newton and Halley, with Flamsteed; or other instances which might be mentioned of later date but no less intense in their bitterness, which have been and will remain a disgrace to the cause of science. All earnest seekers after truth are, and should regard themselves as the children of one family, and should remember that charity and humility are not more becoming than they are conducive to the progress of sound science and learning.

We have observed with pain the eagerness with which scientific periodicals seize upon trivial salient points, in the pages of their cotemporaries, to make invidious comparisons and to charge upon them ignorance and inefficiency. To such the quotation above cited is applicable. Is it truth we seek, or self-aggrandizement at the expense of others' mishaps? Are there not enough means at hand to display our wisdom, without laboring to prove that others are ignoramuses? If we answer these questions affirmatively, let us

throw the cloak of charity over each others' failings; the charity which suffers long and is kind, which envieth not, which vaunteth not itself, which is not puffed up. Let us leave to political journals the bespattering of each other and the coarse personalities of angry disputation, and, patient with differences in opinion and modest in self assertion, remember the words of Colton:—"We are more inclined to hate one another for points on which we differ, than to love one another for points on which we agree. The reason perhaps is this; when we find others that agree with us, we seldom trouble ourselves to confirm that agreement; but when we chance on those that differ with us, we are zealous both to convince and to convert them. Our pride is hurt by the failure, and disappointed pride engenders hatred."

GOLD IN NEW BRUNSWICK.

A few days ago we received a visit from Mr. Thomas W. Langstaff, of Woodstock, Carleton county, New Brunswick, who exhibited some specimens of gold obtained in that county from washings of alluvial deposits with specimens also of gold-bearing quartz, apparently very rich, whether examined by the naked eye or by means of a microscope. None of it has yet been assayed to test its actual value. The specimens compare favorably with those we have seen from California.

Last fall Mr. Langstaff and others associated with him, having discovered what they considered unmistakable indications of gold, and having purchased from the provincial government over thirty square miles of territory, made a test of one portion of the purchased territory. All of it is on the eastern branches of the St. Johns river in three counties, those of Victoria, Northumberland, and Carleton. The test was made in the latter county, about twenty-seven miles from Woodstock, on the Shicktehauk, a branch of the St. Johns. A party, of whom an experienced California miner was one, proceeded to the locality selected for the experiment, where a sluiceway made of boards, being twelve inches in width by nine inches in depth and about two hundred feet long, was erected "Riffles" had been fitted into the sluice at its lower end and about three cubic yards of sand and gravel were shoveled into the upper end. At the lower end which was between twenty and thirty feet below the upper, there had been placed a small quantity of quicksilver for collecting the minute particles of gold which might otherwise have been carried off with the sand by the force of the current. With these rude appliances there was produced nearly ten dollars' worth of gold, which we have seen. This gives a yield of over three dollars per cubic yard of earth, dug on the margin of the stream, the workmen not even wetting their feet. Beside this, a nugget was picked up worth some four dollars. One of the party, an old Pike's Peak miner, "panned" out in fifteen minutes a handsome show of gold, and declared that the deposit fully equaled any he had seen in his experience. The next day a boy of fourteen washed out his day's diggings, carrying home the commingled sand and gold and finishing the panning at home, which yielded over three dollars in pure gold.

Yet it is believed by experts who have examined and tested this locality on the Shicktehauk and others comprised in the purchase that the former does not present so favorable indications as those on the Muniac and Serpentine.

All this country is well wooded, the soil is fertile, and the streams never failing, in many cases affording excellent water power. Further information in regard to these deposits may be obtained by those who feel an interest in this matter by addressing T. W. Langstaff, Woodstock, N. B. or J. H. Lord, Box 773, New York city.

NEW PATENT BILL IN CANADA.

No little sensation and indignation is manifested in New Brunswick by an effort of the new Canadian Parliament to enact a new patent law, less liberal in respect to non-residents if possible than the existing one. The following extracts from an editorial in the Montreal *Evening Telegraph* give some facts relative to the new bill, which, if passed, will be one of the most illiberal and incongruous laws ever enacted. We are assured by private letters, that the bill cannot pass without such amendment as will allow the citizens of New Brunswick the rights they now possess to grant patents to non-residents, and to obtain patents in the States on the same terms as citizens of other countries which the proposed law would abrogate.

The writer in the *Telegraph* says of the proposed bill: "It contains provisions which are certain to embitter the relations between the Maritime Provinces and ourselves, and will by no means tend to remove the difficulties of the position of those who desire to see the Legislative Act of Union one in reality as well as in name. The object of the present bill is, no doubt, to enable the public to benefit by the inventions of foreigners, among whom, from the very terms of its provisions, are included all British subjects not residing in the Provinces, as no inventor can take out a patent here who has not resided in Canada for at least twelve months, and no one can take out a patent at all unless he is the *bona fide* inventor.

"That the law, as proposed, will have a prejudicial effect on the relations between us and the Maritime Provinces, must be apparent to every one who knows the facts of the case. In the United States, patents are issued on the same terms to citizens and foreigners, provided that, in the case of the latter, the country to which they belong grants equal privileges to all applying. In that case the charge is $35 in greenbacks. But if there are prohibitory laws, as is the case with us, then the charge for issuing a patent is $500. By the law in New Brunswick, no difference is made between residents or non-residents; any one is entitled to take out a patent who can comply with the rules of the Patent Office as to his right to the invention. Inventors in New Brunswick have been heretofore, therefore, entitled to patents in the United States at the lowest rate. When this bill passes, they will be at once cut off from this privilege.

"But, besides this, the patents issued for the separate Provinces under the old law are to cover only the same extent of territory as that for which they were issued. By one section, it is provided that every patentee must, under a penalty of $100 or two months imprisonment, have on the article patented by him, the word "Patented" and the year in which it was granted; and by another section, any person having on an article not patented, any word representing that it has been so, subjects himself to a fine of $200 or three months imprisonment. It is plain that if these two sections are enforced a patentee is on the horns of a dilemma. If he keep the patented articles for sale, without the mark, in the Province in which the patent is granted, he subjects himself to a fine of $100 or incarceration for two months. If, on the other hand, he send out of his own to one of the other Provinces to which his patent does not extend, arti les marked as patented, he finds himself liable to a fine of $200, or three months in jail. That this is the absurd position the proposed law will bring us to, there can be no doubt, as any one may satisfy himself by examining the bill. There are other defects which are evident on a mere cursory examination. For instance, by Section 38, any one may file a caveat who has not yet perfected his invention, and is afraid of his idea being made use of by others. And this provision is only fair. But the caveat appears to have an effect in perpetuity, as no time is given in which it shall lapse; and it does not appear to be contemplated that any intimation shall be given to the applicant filing a caveat, when any one else applies for a patent to cover an invention of the same kind as that to guard which the caveat is filed. Without furthur discussing details, it is sufficient that the whole principle of the bill is false, and will work most mischievously. Canada stands alone in this prohibitive policy, which will not only prevent Canadians from reaping the advantage of their own inventive faculties, but will also throw the manufacture of the most important patents into the hands of others; as where expensive models and machinery are required, no man will be foolish enough to invest in them, at the risk of losing the whole fruits of his labor, even although he does obtain the invention by the simple method of robbery, since every one else may plunder him."

[P. S. We are happy to learn through Mr. Charles Legge, just as we go to press, that the proposed bill has been withdrawn, and that no new one will be presented during the sitting of this Parliament, so the old laws will remain in force another year. In the meantime, we hope with our correspondent, that a bill will be framed which will meet the ends desired. Patents will continue to be issued to American citizens in New Brunswick, as heretofore, on liberal terms. Persons desiring patents in that Province can obtain all information respecting the cost and other requirements by addressing this office.—EDS.

LECTURE ON FOOD.

The lectures on Food which have been delivered by Dr. Letheby, at the Society of Arts, are a valuable and permanent contribution to the literature of Europe on a very important subject. In noticing these lectures we shall confine our condensed extracts to those passages which every one can understand, taking it for granted that these competent to follow the scientific arguments will consult the original reports, either in the medical press, where the lectures were first published, or in the volume which Dr. Letheby will, no doubt, do the English-speaking world the favor of publishing.

Tables have been more than once issued, showing the proportions of different food required to yield a certain number of grains of nitrogen, or to show the nutritive value of certain foods; but these, although very proper subjects for the investigation of men of science, are of very little value in a popular sense—so much depends on various modifying agencies, on cookery, powers of digestion, climate and admixture of food. Dr. Letheby early observes that all foods are derived from the vegetable kingdom. In other words, "All flesh is grass," "for no animal has the power of associating mineral elements and forming them into food." It would be a curious question to raise to a party which had just consumed a prime sirloin—how much guano, superphosphate, and farmyard manure had gone, by the intermediation of grass, hay, turnips, and oilcake, to the construction of that beef. Whether the laboratory may eventually manage to manufacture meat is a question which we have not yet commenced to solve. "Man (at present) is a destructive, not a constructive animal." Dr. Letheby begins with the value of vegetable food. Wheat stands first in Europe. The attempts to restore the use of more bran in flour have not been successful, and it is not at all certain that they ought to be. At any rate, navvies believe that white bread is more easily digested than brown bread. Bran has frequently a very irritating effect on the intestinal organs. In practice, 100 lbs. of flour will make from 133 to 137 lbs. of bread; so that a sack of 286 lbs. should yield ninety-five 4 lb. loaves. The baker increases this quantity by hardening the gluten with alum, or with 3 lbs. or 4 lbs. of rice, which, boiled to a gummy mess, will make the sack of flour yield one hundred 4 lb. loaves. Scotch oatmeal is more nutritious than English; but oatmeal is not so economical a food as wheat flour. In 1695, before tea and coffee were common drinks, it appears, from an advertisement quoted in the lectures, that there was a large consumption of water gruel "at the Marine Coffee House, Birchin Lane, Cornhill." The value of barley and rye bread we need not stop to discuss. Philosophers recommend them to the poor, but the poor abandon their use as soon as they can get wheat bread. Maize, or Indian corn, on the other hand, has been established in Ireland as a staple of food ever since the potato famine. Yet, although rich in nourishing matter, it will not make good bread. When deprived of its gluten and harsh flavor by means of a weak solution of caustic soda, and then dried, it forms the expensive food called "corn flour." Peas, beans, and lentils are very nutritious where they can be digested. Nothing but the most prolonged cooking will serve to help in this particular. They are deficient in carbonaceous constituents, and therefore invariably eaten with fat. Thus beans and bacon, and butter with beans, are inseparable in this country, while in the backwoods of Canada, haricot beans boiled and then fried with salt pork are the standing dish of the wood cutters. Potatoes, according to their price, are the most economical food, but the nutritive value is not great. They are deficient in fat, and should be accompanied with dripping, or better still with milk, if meat or fish cannot be had. On potatoes and milk a family of children can be reared well. Potatoes are best cooked in their skins, for the waste is then only about three per cent, or half an ounce in a pound, whereas if they are peeled, it is three ounces in a pound. Mealy potatoes are the most digestible; late in the season, when they are waxy, they are best cooked by stewing. Potatoes are one of the best anti-scorbutics, and are therefore used fresh or preserved in all sea going vessels. There is little nutriment in the garden vegetables in common use. They are much less nutritious than the potato, and they are chiefly valuable for their antiscorbutic properties, for their quality of flavoring insipid food, and diluting strong ones. Cheese theoretically ranks high for nutritive power, being especially rich in nitrogenous matter, but it is extremely difficult to digest, and cannot therefore be taken in large quantities.

Almost all Europeans eat meat if they can get it. Although during the Irish famine it was found that the people preferred stirabout to meat soup, when Irishmen settled in England or America they became as great meat eaters as their neighbors. The amount of bone in beef is rarely less than 8 per cent; in the neck and brisket it is about 10 per cent, and in the shins and legs of beef it amounts to one third or even one half of the total weight. The most economical pieces are the round and thick flank, then, the brisket and sticking-piece. Horseflesh, Dr. Letheby says, is considered on the Continent superior to beef; and no doubt a steak from a fat horse is better than one from a lean milch cow or patriarchal bullock. Good bacon should not lose more than ten to fifteen per cent in in cooking. Experience has taught what science has proved—viz., that the large amount of carbonaceous matter in bacon makes it the best addition to substances rich in nitrogen, such as eggs, veal, poultry, liver, beans, and peas. Dr. Letheby remarks that "fish is not a favorite article of diet with the laboring classes, unless it is salted or smoked, perhaps because it does not easily satisfy hunger and is quickly digested;" but it is more probable that the cause rests in the necessity of more elaborate cooking and appliances for certain kinds of fish. All fish are in their best condition at the time of the ripening of the milt and roe; they are fatter, and have a better flavor. Eggs contain about twenty-six per cent of solid matter, of which fourteen percent is nitrogenous and ten and a half carbonaceous, or fatty: the yolk contains the fat, while the white is richest in nitrogen. Eggs being very deficient in carbonaceous matter, go well with fat bacon, oil in salid and farinaceous food. Fat in some shape is universally consumed. Cocoa and chocolate owe their chief value to the fat they contain; Cocoa is composed of fifty per cent of fat. Of liquid articles of diet, beer and porter stand first in nutritive value. It is estimated that for the daily supply of London city there are distributed about 4,200 tuns of fish, over 4,000 sheep, nearly 700 oxen, about 90 calves, 4,000 pigs, (including bacon ond hams), 5,000 fowls, a million oysters, and nearly a million quartern loaves.

In Dr. Letheby's second lecture he refers to the artificial means of encouraging digestion. The functions of saliva are to lubricate the food for deglutition, to carry oxygen into the stomach, and to furnish a solvent for starch and tender cellulose. It has no chemical action on fat, or fibrin, or albuminous bodies. An artificial saliva may be obtained. Liebig's extract of malt is an example of this: also Mr. Morson's saccharated wheat phosphates. Both of these are aids to the digestion of farinaceous food. Pepsin is artificially prepared by several persons to assist digestion, by a preparation, as it were of gastric juice. The strongest pepsin is obtained from young healthy pigs, which are kept hungry, and are then excited by savory food, which they are not allowed to eat; while the influence of it is strong upon them, and the secretions are pouring out in expectation of the meal, the animals are instantaneously killed by being pitted. Pepsin, like diastase, is rendered inert by a temperature of from 120° to 130° Fah., and therefore hot drinks after a meal are hurtful. Cooking has an enormous influence on the digestibility of food. We cannot believe that roast mutton is less easily digested than ox liver or than goose or beef. It seems that of starchy substances, roast potatoes are more easily digested than boiled. Dr. Letheby sums the aids to digestion thus: First, proper selection of food, according to the taste and digestive powers of the individual; secondly, proper treatment as regards cooking, flavoring, and serving it; thirdly proper variations of it, both as to its nature and treatment, so that the appetite may not fail; fourthly, exercise, warmth, and a genial disposition. The last condition shows that those who give elaborate dinners should take care to provide one or more amusing guests. We have said enough to draw attention to these lectures, which condense in a popular manner, the latest scientific investigations in connection with the subject of food.—*London Journal of Gas Lighting.*