

of the medical officer of the local government board presents the entire question of the destruction of germ-life in a new aspect, including, as it does, a memoir on disinfection by heat, from the pen of Dr. Parsons. The degree of dry heat necessary to kill the germs of diseases well known to be infectious was first investigated. The bacilli of splenic-fever, for example, were killed by exposure for five minutes in a dry heat varying from 212° to 218° F. but their spores did not yield to two hours at 220°. One hour at 245°, and four hours at 220°, achieved the result. Some very remarkable practical instances are given of the difficulty with which dry heat penetrates such articles as bedding, blankets, and pillows. For example: a thermometer enveloped in a roll of flannel, placed in a hot-air bath at 212°, only registered 130° at the end of one hour! Dr. Parsons demonstrated by numerous experiments that steam at or above 212° possesses a very much greater power of penetration and disinfection than dry heat, and that, where actual steam cannot be employed, moistening the air of the heated chamber materially reduces the time required for efficient disinfection. Apparatus for thus treating the clothes, etc., of the sick poor ought to be a feature of the municipal arrangements of every city.

The sewage discussion (started by Dr. Meymolt Tidy's paper, alluded to in this correspondence in the summer) was continued, but not concluded, last night. Dr. Alfred Carpenter made a very strong speech in favor of irrigation, pointing out that the milk obtained from the sewage farm at Croydon was consumed with perfect safety. On the question of standards, a decided opinion was expressed, that these constant discussions of chemists would before long lead to a complicated formula, which would become a standard in a particular case.

A curious discussion, which attracts a good deal of attention, is now going on upon the use of boracic (or boric) acid for the curing of fish. It is being largely employed by the Norwegians; and the result is, that Scandinavian herrings are to some extent superseding the Scotch produce in the English market. Opinion is largely divided upon its toxic properties, in repeated small doses, and the whole matter is so new, that *experientia docet* will hardly avail. The first observation of the preservative power of alkaline borates is said to have been made in the case of a dead horse in southern California.

W.

London, Dec. 2.

HUBERT HERKOMER, Slade professor of art at Oxford university, proposes to paint before his classes as a means of instruction.

#### NOTES AND NEWS.

IN referring to the work of the appropriation committee recently on the floor of congress, Mr. Long from Massachusetts remarked that "it ought to be said in justice that the coast survey is in a condition of suspension, owing to the unaccountable, and, I think, culpable neglect of the President to appoint a man of scientific attainment at its head. The committee on appropriations have some reason for saying that they do not feel like giving full weight to the recommendation of a superintendent, unless that superintendent be a man of scientific acquirements. The gentleman who is at the head of it — an estimable man, who is doing the best he can, and is to be credited for what he has done — is not and does not pretend to be a man of any fitness or any training for the place. He would frankly say, I have no doubt, that he regards himself merely as a *locum tenens*, and is ready to give it up whenever the President will select the proper man. And yet for nearly two years the President of the United States, turning a deaf ear to the demands of science and commerce, refuses to fill this post, for which there is no lack of worthy material, and is making this coast survey the sport almost of public opinion."

— The recent death of Paul Bert, and the publication of a new edition (Philadelphia, *Lippincott*) of his 'First steps in scientific knowledge,' are amply sufficient reasons for calling further attention to that admirable little book. Its phenomenal sale in France, and the large sale of the English edition, apart from the intrinsic excellence of the book itself, warrant us in predicting the great success of the edition prepared for American schools by Prof. William H. Greene of Philadelphia. Though embracing the elementary facts of natural history, geology, physics, chemistry, anatomy, and physiology in some four hundred and fifty duodecimo pages, M. Bert's book is at once thorough, simple, and exact. It is a book which should find its way into every school in the country pretending to give a sound mental training; and the mastery of it, or its equivalent, should be required for admission to every high school and college in the land.

— Professor Heinrich von Treitschke of the University of Berlin has been appointed royal historiographer of Prussia, in succession to the late Leopold von Ranke.

— The steamer A. D. Bache, of the coast survey, will leave New York this week for the coast of Florida, where Assistant Hergesheimer is already at work. Assistant Perkins will commence work on the south coast of Florida about Jan. 1.

All the parties on the transcontinental geodetic work have now left the field on account of the winter season; all the parties on the Pacific coast also have been withdrawn from the field on account of the lateness of the season.

— The Saturday morning lectures given by Professor Boyesen and Dr. Butler at Columbia college last spring, proved so successful that arrangements are making for a number of similar lectures to be given during the winter and spring of 1887. The lectures will be open to the public, and tickets may be obtained free of charge by application to the registrar at Columbia college. Among the announcements definitely made are two lectures by Professor Munroe Smith on Bismarck, on March 12 and 19, and two on pedagogics by Dr. Nicholas Murray Butler on March 26 and April 2. It is also expected that Professors Boyesen and C. S. Smith, and Instructors Goodnow and Scribner will deliver lectures.

— Somebody has been figuring out the average salary paid to teachers in a selected list of leading cities in the United States, with the following results:—

San Francisco . . .	\$980.06	St. Louis . . . . .	\$607.01
Boston . . . . .	933.08	Albany . . . . .	606.58
Cincinnati . . . .	723.25	Brooklyn . . . . .	606.22
New York . . . . .	707.90	Kansas City . . . .	606.13
Chicago . . . . .	705.66	Detroit . . . . .	605.19
Dayton . . . . .	698.28	Indianapolis . . . .	601.79
Columbus . . . . .	672.71	St. Paul . . . . .	599.87
Washington . . . .	671.65	Providence . . . . .	505.77
Springfield . . . .	641.64	Louisville . . . . .	595.41
Newark . . . . .	638.01	Buffalo . . . . .	588.49
Milwaukee . . . . .	631.94	Baltimore . . . . .	576.87
New Haven . . . . .	614.00	Nashville . . . . .	570.82
Minneapolis . . . .	607.40	Philadelphia . . . .	517.51

— We have received from Messrs. Macmillan a number of books in their Clarendon press series for schools. They are, as a matter of course, models of book-making, and it is a luxury to use them. Abbott's 'Greek reader' is novel, for it substitutes Aesop's 'Fables,' and stories from his life, for the traditional selections from the Anabasis. Miss Buchheim's new edition of Niebuhr's 'Griechische heroen-geschichten,' and Saintsbury's capital edition of Racine's 'Esther,' as well as his selections from Gautier, are doubly welcome, because they furnish material for placing elementary modern-language instruction on a higher plane. The meaningless sentences and the scraps of prose literature too often forced upon the young student of French and German, not only fail to give him a thorough and accurate knowledge of the grammar, — for which purpose they are presumably intended, — but they deaden his interest, and blunt his literary sense, at an age when both should be stimulated and encouraged. The use of some such books as these prepared by the Clarendon press is infinitely preferable. To Mr. Wickham's notes on selected odes

of Horace, published in the same series, we have but one observation to make, and perhaps that should be addressed to the publisher; that is, that notes of this class and extent are needed within the same covers as the text itself, and nothing is gained, but much lost, in convenience, by binding the notes separately. We believe, however, that the publishers do have an edition in which both odes and notes are bound together.

— Copenhagen has, according to the census of this year, 285,700 inhabitants, an increase of 1.6 per cent in the last twelve months.

— According to Professor Heim of Zurich, there are 1,155 glaciers in the Alps, of which 249 are more than 7,500 metres in length. The glaciers are distributed as follows: in Switzerland, 471; in Austria, 462; in France, 144; and in Italy, 78. The largest glacier is the Aletsch, which stretches over 24 kilometres. The total surface of the glaciers is estimated at 4,000 square kilometres, of which the glaciers in Switzerland alone furnish 1,840 square kilometres.

— There are 510 kilometres of railway in Greece.

— The first Siberian university has recently been opened at Tomsk.

— Khartum, which is in ruins through the fortunes of war, has yielded its precedence as the principal town of the eastern Soudan to Omdurman on the White Nile.

— The correspondents in Switzerland and France, of the London *Journal of education*, report the following news, which is of general interest. In Switzerland the minister of instruction has taken in hand a revision of the law on higher education of 1879, on the following grounds. The present code is not based on sound psychological principles, and ignores almost entirely the natural development of the mind. Some subjects, eminently fitted for the earlier years of the intellectual development of the pupils, are reserved for the higher classes only, while the lower classes are chiefly occupied with very indigestible matter. The teaching of classics, as at present carried out, has a most pernicious influence in the school. It is commenced too early, too much time is given to it, and it is not apportioned on rational grounds. Latin and Greek stand in the way of many subjects of equal value with regard to mental training, and of far greater significance in actual life. The pupils, as a rule, take little interest in their classical studies. But this is hardly to be wondered at, seeing that the study of literature is not begun until the fourth year in most *gymnasias*, more than three years and a half being spent on a purely grammatical course. The proposed reform

will chiefly consist in relegating the classics to the higher classes of the *pro-gymnasia* and to the *gymnasia*, and in giving a greater share of the timetable to modern languages. In France the study of modern languages, so long neglected, is being encouraged with great zeal, and at a considerable outlay of money. The minister of instruction, M. René Goblet, intends to send those students of the *Faculté des lettres* who have been recommended to him for industry and ability, to Germany and England after the first year of their university course. All their expenses are to be defrayed by the state. Their stay is to extend from July to December.

— Professor Alphonse Mongeol of the lycée at Aurillac writes in *L'université* as follows concerning the necessity for a knowledge of German: "The German language is spoken by more than eighty millions of persons in Germany itself, in Austria, Switzerland, Belgium, Holland, Russia, and America. On a recent journey from Constantinople to Paris by way of Buda-Pesth, Pressburg, Vienna, Linz, Salzburg, Augsburg, Ulm, Stuttgart, Carlsruhe, and Strasburg, I called the attention of my companions to the fact, that, although we stopped in a number of the finest cities of Europe, it was not until we reached Strasburg that the French language was of the slightest use to us. In all branches of science Germany stands at the top. I need not refer to the countless number of publications on scientific and literary subjects which appear annually in Germany, and which it were folly to think of translating into French. The rector of the school-district of Clermont lately told me that he would gladly exchange all that he knew of Greek and Latin for an equal knowledge of English and German. Who is there among our scholars, or how many can we count in our entire nation, who can deliver a scientific address in the German language as Dr. Koch lately spoke in French at Marseilles, and the archaeologist Schliemann at Constantinople?"

— Dr. Percival, president of Trinity college, Oxford, has been appointed head master of Rugby school, and has accepted the appointment. Dr. Percival is an LL.D. of the University of St. Andrews.

— At the recent election for a lord-rector of St. Andrews university, Mr. A. J. Balfour, M.P., secretary for Scotland, was chosen by a majority of twenty votes over Sir John Lubbock, M.P.

— Principal Sir William Muir of the University of Edinburgh has announced that arrangements have been completed for conferring a special schoolmaster's diploma, and that regulations have been adopted for the granting of the same. The

diploma shall be conferred only on graduates in arts of the University of Edinburgh, who have attended the education class of the university, and who have passed an examination in the theory, art, and history of education, to be conducted by the professor of education and an additional examiner. Each candidate must give evidence that he has attended a course of practical instruction in a training-college for teachers; or that he possesses the government qualification in the practice of teaching required of graduates, and provided in the Scottish code; or that he has taught publicly at least one year in a school, and holds a satisfactory certificate of practical skill from the head master of that school. As the first additional examiner of this scheme, the university court has appointed Mr. Maurice Paterson, B.A., rector of the Free church training-college, Moray House, Edinburgh. The subjects of examination in April, 1887, are, 'The class lectures of the professor of education;' Locke, 'On the conduct of the human understanding;' Milton, 'Tractate on education;' Comenius, 'Great didactic.'

— The Edinburgh association for the university education of women, founded in the winter of 1867-68, for the purpose of providing for women means of the higher education as nearly as possible equivalent to that provided for men in the Scottish universities, has opened, for the session 1886-87, classes in English literature, junior mathematics, senior Latin, and logic, conducted by university professors and assistants; and a class in physiology. Not only do students receive class certificates, signed by the professors and lecturers, but, by special regulations of the University of Edinburgh, students who have attended a certain number of the association classes, and have passed the local examinations of this or some other university, are admitted to examinations for further distinctions, in the form of ordinary and honor certificates in arts, granted by the university itself, and signed by the vice-chancellor. A sufficiently extensive course of study in the classes, thus stamped with the approval of the university, entitles to the full diploma of the association. At the end of last session, eight students gained ordinary, and four honor certificates, while two gained the full diploma of the association.

— At Oxford a new hall for women, called St. Hugh's, has been opened. It is intended for the benefit of members of the English church. The annual charge for board, residence, etc., is £45, and the tuition and lecture fees amount to £15 more.

— In the November issue of the *Revue internationale de l'enseignement*, M. Buisson concludes

his account of the colleges and universities of the United States. In this last article he describes Yale, University of Michigan, Johns Hopkins university, the American school for classical studies at Athens, and colleges for the higher education of women.

— The new vice-chancellor of Cambridge university is Dr. Taylor, master of St. John's college.

— The various state teachers' associations take advantage of the Christmas vacation to hold their annual or semi-annual meetings. Among others, the New Jersey teachers are to meet at Trenton; the Iowa teachers, at Des Moines; the Michigan teachers, at Lansing; the Associated academic principals of New York state, at Syracuse.

— M. Goblet, the minister of public instruction in M. de Freycinet's cabinet, has become premier of France. The new minister of public instruction is M. Berthelot, who has been for some time an inspector of secondary schools.

— Dr. W. W. Ireland, the well-known alienist, publishes in the *Journal of mental science* (October, 1886) an admirable account of the insanity of King Louis II. of Bavaria. The influences of hereditary neuroses, the gratification of what were at first slight eccentricities, and the gradual evolution of the most serious symptoms of hopeless insanity, make this case almost a type of the influences most favorable to mental instability. The king was not only insane, but typically insane.

#### LETTERS TO THE EDITOR.

\*.\*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

##### Pleuro-pneumonia.

IN your issue of Nov. 26 you speak of the prevalence of pleuro-pneumonia in the counties of Harvard, Clinton, Newton, Jasper, and Benton.

1°. There is no Harvard county: presumably you mean *Howard*.

2°. Dr. Salmon and the officers of the state board of health declare the disease to be 'black leg,' and up to date about 400 head have died in this state. Dr. Salmon announces there is now no pleuro-pneumonia in the western states except at and near Chicago, Ill.

AMOS W. BUTLER.

Brookville, Ind., Nov. 29.

[The reports that contagious pleuro-pneumonia existed in Indiana are denied, and it is now stated that what was reported to be that disease is pronounced by Dr. Salmon and the officers of the state board of health to be 'black leg,' from which 400 head of cattle are said to have died. It is also stated that Dr. Salmon of the U. S. bureau of animal industry has announced that there is no contagious pleuro-pneumonia in the western states except at and near Chicago, Ill.]

On this subject we quote from a letter just received

from Dr. D. E. Salmon, chief of the bureau of animal industry: "In reference to the districts in which contagious pleuro-pneumonia exists in the United States, would say, that beginning with Long Island, New York, and Westchester counties, in the state of New York, we have found it to exist in various parts of New Jersey and the south-eastern part of Pennsylvania. The points of infection are continually changing in these states, and it is a very difficult thing to make a definite statement by counties. In Maryland there is a good deal of the disease in Baltimore and vicinity, but the remainder of the state appears to be nearly free. The District of Columbia has been infected for a long time, but I do not know of any herds here in which the disease exists now. Probably a vigorous inspection would discover some. In Virginia I do not know of any infected district except Norfolk. This is all there is east of the Alleghanies. In the Mississippi valley states there is but one outbreak at present, and that is in Cook county, Ill. The disease which I investigated in Indiana was 'verminous bronchitis,' or lung worms." — ED.]

#### Liberty's torch.

The noble statue of Bartholdi in New York harbor suffers a great injustice, so far as the idea of its conception goes, and the requisites for its most complete artistic presentation is concerned, in being made to hold a star in its hand instead of a wavering pile of flame. The blue orb of intense light shining from the uplifted hand poorly represents the lambent and rolling stalks of fire which the thought of a torch suggests, and fails to accentuate the statue with any dramatic or spectacular force.

The attempt should be made to burn a large volume of gas properly distributed over the present surface of the torch, and this would seem altogether feasible. A consumption of from a thousand to two thousand cubic feet of gas per hour might be required, but the result would be incomparably more striking and noteworthy. A series of one-inch pipes passing up into the torch, emerging at various points so as to completely invest it with the confluent flames issuing from their openings, would probably serve the purpose, the gas being permitted to burn under a pressure but slightly in excess of its own ascensional power. Two objections might be urged against this proposition, — first, the smokiness of the flame, producing an ugly and dirty appearance; second, the probability of its extinction in high gales. The first objection has not really much weight, as the tail of drifting smoke would hardly detract from the splendor of the pillar of flame, and in any case could be considerably overcome by an efferent tube with a perforated circular cap feeding air to the summit of the torch, somewhat on the plan of the central air-channel in the popular climax oil-lamp. The second objection is valid, but only in extreme cases; and, as the gas should be lit by electricity, the highest gales would only alter the constancy of the light, its extinction being succeeded by the renewed flame. Again by curving the extremities of the pipe, even these exceptional cases might be yet further reduced in number. The gas might be supplied from the mainland, or if that appears too expensive, or itself impracticable, naphtha or gasoline gas (enriched air) could be safely used, the precaution being taken of substituting for the large tubes bundles of smaller pipes.