Yellow-Fever at Key West.

The history of yellow-fever in Key West (being the most exposed point in the United States) dates from a very early period. The frequent occurrence of epidemics of this disease, the recurrence of isolated cases between epidemic periods, its recent reappearance in October, 1889, and during the month of January, 1890, point, in the opinion of Dr. J. L. Posey of the United States Marine Hospital Service, to but one rational conclusion,— that the disease has finally become endemic in Key West.

BOOK-REVIEWS.

Physiognomy and Expression. By PAOLO MANTEGAZZA. (Contemporary Science Series.) New York, Scribner. 12°. $1.25.

THE author of this work, who has published others on related topics, remarks in his preface that he "takes up the study of expression at the point where Darwin left it, and modestly claims to have gone a step further." He begins by sketching the history of the study, giving, as it seems to us, altogether too much prominence to the astrologists and other fanciful writers, but assigning the highest place to Darwin. His own work is divided into two parts, the first treating briefly of the anatomy of the face and the various features, while the second and much larger part deals with expression strictly so called. In this second part we find a great wealth of facts relating to the outward signs of various emotions, evidently collected with great care, and showing great keenness of observation; and, so far as our own experience and knowledge enables us to judge, these statements of fact are for the most part correct. They are also well classified and arranged; and, as a description of expression in its various phases, the work can be well recommended. We look in vain, however, for any attempt at explaining the modes of expression. The author quotes Darwin's theories, which, with some modifications, he accepts; but he makes almost no application of them. He also announces what he calls a law of expression, "according to which expression is the clearer and more characteristic in proportion as it is provoked by a more powerful, by a better defined emotion," which would seem to be a truism. But in the main Signor Mantegazza's work is purely descriptive, and lacking in those philosophical qualities that we find in Sir Charles Bell and in Darwin. As a storehouse of facts it will be useful; but for further light on the theory of expression we shall have to wait for some deeper thinker.

AMONG THE PUBLISHERS.

AMONG the more important articles in *Harper's Magazine* for April are "A Suit of Clothes," being one of a series of papers on great American industries, by R. R. Bowker; and "Three Indian Campaigns," by Gen. Wesley Merritt, U. S. A. These articles are handsomely illustrated. There is also a well-written and interesting article, by Richard Wheatley, descriptive of the New York Maritime Exchange.

—The Forest and Stream Publishing Company have in press "Trout and Salmon Fishing," by one of New England's best-known anglers; also a new edition of Grinnell's "Pawnee Hero Stories and Folk-Tales."

—Messrs. D. Appleton & Co. published last week "Studies in Hegel's Philosophy of Religion," with an appendix on "Christian Unity in America," by Dr. J. M. Sterrett; and "The Spiritual Sense of Dante's 'Divina Commedia,'" by W. T. Harris, LL.D.

— Messrs. Ginn & Co. announce to be ready in May "Wentworth's School Algebra." The necessity of having new plates for the author's "Elements of Algebra" has given him an opportunity to write a new book, with fresh and interesting problems, and with definitions, illustrations, and arrangements of the subject-matter like those in his "College Algebra." The work is written for high schools and academies, and is a thorough and practical treatment of the principles of algebra up to and including the binomial theorem.

—Porter & Coates have published "Life and Works of the Earl of Beaconsfield," by Judge F. Carroll Brewster. Every work of Disraeli has been sketched so as to afford condensation of plots, characters, and noteworthy passages. They have also ready, by the same author, "Molière in Outline," being a translation of all important parts of Molière's works, with notes, abridged from Van Laun and others, to which are added the arguments of the play.

— The prospect is that the exploration and conquest of Africa will be the problem of the twentieth century. Already nearly every nation has its Stanley. France has hers in the person of M. Trivier, whom she prefers, however, to call her Livingstone. An article on this "French Livingstone" by Henry Fouquier has the post of honor in *The Transatlantic* of April 1. The peaceful method employed by Trivier in his recent two years' journey across Africa is contrasted by the writer with the warlike and bloody methods of Baker, Emin Pacha, and Stanley. Following this article Caliban (Emile Bergerat) ridicules the anti-Jewish crusade, Enrico Panzacchi critically sketches the decadent school of writers, and there are extracts from the new volume of Edmond de Goncourt's "Memoirs," accounts of new novels by Zola and Tolstoï, and an interview with Louise Michel regarding her operetta, "In the Moon."

—Dr. Martineau's forthcoming book, "The Seat of Authority in Religion," will be published almost immediately by Longmans, Green, & Co. The work is addressed, not to philosophers or scholars, but to educated persons interested in the results of modern knowledge.

—"Old Friends," Mr. Andrew Lang's new book, to be issued here at once by the Longmans, is not unlike his "Letters to Dead Authors." It describes the meetings of the characters of one novelist with those of another. For example, Dugald Dalgetty tells of his duel with one of the "Three Musketeers," Barry Lyndon describes his playing cards with Allan Stuart Breck (from "Kidnapped"), and Trollope's Mrs. Proudie sets forth Becky Sharp's assault on the bishop.

— The April number of *College and School* (Utica, N.Y.) is a "Gen. Spinner number," containing two portraits of the ex-treasurer, with his famous signature appended. The general himself contributes the last article from his pen to appear in print, — an interesting reminiscence of his school-days in the Mohawk valley, where, as he says, he was "educated to ignorance." Three pages of the manuscript are reproduced in facsimile. Another facsimile reproduction is a translation, by the general, of a German poem, "*Ich bin nicht einsam wen allein.*" In his article, "The Watch Dog of the Treasury," A. G. Richmond relates an incident of the Breckenridge attack upon Washington, which strikingly illustrates the foresight of the man who was the guardian of the country's treasure. "Spinner, the Student," is an account of the formation of the general's lifelong habit of reading. L. L. Merry, in his "Recollections of Gen. Spinner," narrates in a familiar way some things which only an old friend would be likely to know. L. R. Tuttle, ex-assistant treasurer of the United States, tells how he tried to persuade the general to let Mr L. D. Ingersoll write a memoir of his life, while Louis Lombard has a word to say about the general's remarkable memory and his garretful of note-books The number is eight pages larger than usual, and contains, besides the Spinner papers, Mr. William H. Hayne's "Editor's Library Table," and the usual departments of college news, literary notes, and book-reviews.

— Messrs. Ginn & Co. announce as published last month "Sidney's Defence of Poesy," edited by Albert S. Cook, professor in Yale University. Sir Philip Sidney's "Defence of Poesy," in which, says Taine, "we meet with genuine imagination, a sincere and serious tone, a grand commanding style, all the passion and elevation which he carries in his heart and puts into his verse," has not hitherto been accessible to the school and college student in a handy and readable edition, notwithstanding the existence of one or two literal reprints of the earliest copies. The attempt is here made, by modernizing the spelling and punctua-

tion, and by providing an introduction and a copious body of notes, to enable any intelligent reader to draw profit and delight from this masterpiece of poetical philosophy. This volume will furnish an admirable introduction to a general course in poetry, or to the poetry of the Elizabethan age in particular. As one of the best specimens of the earlier Elizabethan prose, it will be useful to the student of English prose in its historical development; and as the first annotated edition of the "Defence of Poesy," in a critical text formed by the collation of the two earliest copies, it will be indispensable to libraries, public and private.

—George L. English, Edwin C. Atkinson, and William Niven, dealers in minerals, having on April 1 entered into a partnership, the business of each will be carried on by the new firm under the name of George L. English & Co., at the old stands, 1512 Chestnut Street, Philadelphia, and 739 and 741 Broadway, New York. With enlarged facilities and experience, they hope to give even more careful attention to the wishes of customers in the future than in the past.

—Messrs. Ginn & Co. announce to be published in May, "Reference Handbook of English History for Readers, Students, and Teachers," by W. H. Gurney. This work is intended as a constant companion and assistant to the reader or student of English history, affording him a rapid and easy method of placing his persons and dates before him in accurate relationship to each other, and helping him to draw them out of the maze of confusion and contradiction in which we find them in nearly all our great histories. It identifies enery prominent man from the time of the Confessor to Victoria, giving the date of his death, to whom married, and the number and names of his children. Unless the student becomes thoroughly acquainted with the characters about whom he is reading, the reading of history is apt to be confusing, uninteresting, and conflicting. The materials for this work have been drawn from Dugdale, Freeman, Palgrave, Longman, Sanford, and Townsend, and many other valuable works, the whole passed through a critical examination and comparison, in which the impossible has been rejected and the reliable retained. It saves the reader hours of study, and makes his work a pleasure.

—The Appletons have published, in their series of History Primers, the "History of Egypt," by F. C. H. Wendel. The work gives evidence of careful and conscientious study, and it is also plain in style. It has, however, the common fault of short histories,—an excessive amount of detail; the mass of petty facts and of proper names making the work confusing. It has also a more serious fault, in that it treats almost exclusively of the kings and their doings, with hardly any reference to the people. There is an account on pp. 100, 101, of a strike of laborers employed on certain government works, due to the non-payment of their wages, and there are brief references here and there to commercial enterprises; but in the main the condition and occupations of the people are ignored. The introductory chapter, which treats of the hieroglyphic writing, the Egyptian religion, and some other matters, is the most interesting and instructive part of the book; and it is a pity that the rest of it was not written on a similar plan.

—The corporation of Harvard University has authorized the publication of two monographs, which it is hoped may form the beginning of a series. The first number, to be ready in April, will be "A History of the Veto Power in the United States," by Edward Campbell Mason, A.B., instructor in political economy. Mr. Mason's work will include a chapter on English and Colonial vetoes, and a chapter on State vetoes. The body of the work is a systematic discussion of all the presidential vetoes, arranged by subject, and based on a study of the records of Congress. Then follows an investigation of the constitutional questions which have arisen out of the use of the veto power. An appendix contains a chronological list of presidential vetoes, with complete references to the journals of the two Houses, and a bibliography of the subject. In an introduction the editor, Professor Hart, will discuss the veto in modern constitutions. The second number of the series will be "An Introduction to the Study of Federal Governments," by Albert Bushnell Hart, Ph.D., assistant professor of history. This monograph will contain an historical introduction, with brief sketches of the rise and institutions of the principal federal governments which have existed from the establishment of the Greek federations to the present day. To each sketch will be appended a brief, critical bibliography. Then will follow a parallel arrangement of the texts, in English, of the four most important federal constitutions,—those of Canada, Germany, Switzerland, and the United States. There will be an appendix containing a list of special authorities on federal government, and of references to discussions in more general works. The monographs will be published by Ginn & Co., Boston.

—Our readers should remember that the only uniform edition ever published of the complete works of Walter Bagehot, in five volumes, 2,700 pages, is published by The Travelers Insurance Company, Hartford, Conn., at $5 for the set, all charges paid. The publication is supposed to be an advertising scheme of the insurance company, but how is not so evident to the layman. Meanwhile it would be a good plan for all who value Bagehot's writings to secure a set, as they are certainly cheap. There is nothing objectionable in their make-up or appearance.

— Volume VI. (1890) of *The American Journal of Archæology and of the History of the Fine Arts* will contain among its articles of interest the following: "Hittite Sculptures" and "Oriental Antiquities," by Dr. William Hayes Ward of New York; "Antiquities of Phrygia," by Professor William M. Ramsay of Aberdeen, Scotland; "Terra-cottas in American Collections," by Salomon Reinach, Museum of Saint-Germain, France; "Reminiscences of Egypt in Doric Architecture," by Professor Allan Marquand of Princeton; "Three Heads of Zeus, Hades, and Poseidon, of the Hellenistic Period," by Professor Adolph Michaelis of Strassburg; "Excavations and Discoveries made by the American School of Archæology at Anthedon and Thisbe, in Bœotia, Greece," by Professor F. B. Tarbell of Harvard University and Dr. J. C. Rolfe of Columbia College; "Greek Sculptured Crowns and Crown-Inscriptions" and "Distribution of Hellenic Temples," by Dr. George B. Hussey of Princeton; "Norms in Greek Architecture," by Professor Marquand and Dr. Hus ey; "The Recently discovered Early Christian Palace under SS. Giovanni e Paolo, at Rome," by Padre Germano of the Order of Passionists; "The Lost Mosaics of Rome from the Fourth to the Ninth Century," by Eugene Müntz of the Beaux-Arts, Paris; "Cistercian Monuments as the Earliest Gothic Constructions in Italy," "Roman Artists of the Middle Ages," "Christian Mosaics," and "Tombs of the Popes at Viterbo," by Professor A. L. Frothingham, jun., of Princeton. Being the organ of the Archæological Institute of America, and the medium of direct communication from the American School at Athens, this work has an increasing popularity among general readers as well as specialists.

—The United States Bureau of Education has issued two circulars of information that may interest some of our readers. One is "The History of Federal and State Aid to Higher Education in the United States," by Frank W. Blackmar, giving an account of the various grants of money and other valuables in aid of universities and other higher institutions since the first settlement of the country. The work bears the marks of careful study and preparation, and will be useful to educational specialists; but the style is so unattractive that we fear the book will not have many readers. The other circular referred to is the "Proceedings of the Department of Superintendence of the National Educational Association" in Washington last spring, and contains much interesting matter. One of the leading topics discussed was manual training, both sides of the controversy being represented, and some important points elucidated. Perhaps the ablest paper was that of Dr. William T. Harris on "The Psychology of Manual Training." The author expressed the wish not to take part on either side of the pending controversy, but sought to ascertain what manual training could and could not do for the development of the mind. His conclusion was that though manual work may to some extent train the hand and the eye, yet the essential part of intellectual education is the training of the reflective faculties, to which manual work can contribute little or nothing. Most of the speakers and essayists were in favor of special industrial schools in places where there was sufficient de-

mand for them, but against the adoption of manual training as a part of the general educational course. At the close of the discussion one of the members moved that a committee of the association be instructed to define the term "manual training," which would certainly seem to be a proper and even necessary thing to do, if there is ever to be an agreement about the expediency of such training. But the motion raised a perfect storm of opposition, so that the chairman had to interpose a few remarks to prevent an acrimonious dispute. Another important subject treated was that of examinations, especially the examination of teachers, which was recognized as at once a work of great importance and of great difficulty. Candidates for the position of teacher are now often examined by persons with no real fitness for the task, and some remedy for this evil is undoubtedly necessary. Besides these topics, the assembled superintendents discussed the training of teachers, the duties of principals, and other themes that need not be specified here.

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.*

The editor will be glad to publish any queries consonant with the character of the journal.

On request, twenty copies of the number containing his communication will be furnished free to any correspondent.

Heat and Ventilation.

IN your issue of Feb. 28 is a notice of the Timby system of heating and ventilation, which, you say, "is now attracting universal attention, especially in New England." It is to be hoped that New England will not miss the delicate touch of flattery perhaps unconsciously given her in this quotation, and that your columns are open to any voice of intelligent response which may come back from her.

The attention of which you speak is not stated to be that of competent engineers, nor that of others better qualified than "ex-mayors" to judge of the merits of the described system. It is not defined as that of either scientific sanction or condemnation.

But the appearance of the article in *Science*, and without unfavorable comment, would seem to the popular mind to lend a quasi-scientific approval to the enterprise, as it doubtless has afforded gratification to its promoters.

The art of ventilation has suffered much injury at the hands of many whose ingenuity has not been the well-trained servant of a sound scientific knowledge. The field is a fertile one for the culture of schemes and methods more visionary than practicable, and more gratifying to inventors than profitable to users. To protect the public against imposition, to save the popular mind from discouragement through repeated and costly failures, to expose and weed out the worthless methods from the good, and to establish popular faith by evidence of actual or possible success in any worthy undertaking, is a legitimate and laudable service for any man or journal capable of rendering it.

To this end it would afford satisfaction to see in your columns a thoroughly trustworthy discussion of the applicability of the Timby system to the actual necessities of good ventilation and heating. With a view to eliciting contributions to such a discussion, the following propositions are submitted : —

First, The mechanical part of the problem is beset with insuperable difficulties of various sorts, some of which are closely akin to those belonging to the long ago demonstrated impracticable scheme of ventilating a city's sewers by a centrally located system of pneumatic exhausters.

In the company's pamphlet, and under the head of "Plan of Introduction," the statement is made that it is proposed to heat and ventilate a town of 50,000 inhabitants by means of one centrally located plant.

The first essential in ventilation is an adequate air volume, and the second is an effective use of it. If the dermal and thoracic excretions are to be diluted to one in two hundred, — a proportion of diluent which for the pelvic excretions would be considered far too small to fit them for potable or edible use, — the air-supply for such a town should be 150,000,000 cubic feet per hour; and for the sweetening of the 2,000 buildings of 50,000 cubic feet capacity each, in which the inhabitants may, for the purposes of computation, be supposed to compactly live, the air-supply should reach at least that quantity. Let it be reduced to 100,000,000, and, for the sake of simplifying the mechanical problem, let the houses be ranged along two intersecting streets, 500 houses to each half-street, and let the ventilating plant be located at the point of intersection. Let the houses stand in compact block form, and average, with alley and cross-street spaces, forty feet frontage. Let each of the main air-conduits be six feet in diameter, and the central supply-shaft twelve feet. The velocity of air-flow through the main conduits would be nearly 15,000 linear feet per minute, and the theoretical power required to propel the air would be about 125,000 horse-power, 4,000 being required to give the air its initial motion, and the balance to overcome the resistance of friction. This computation takes no account of the further work required for moving the air through leads to the 2,000 buildings, and through the ramifying conduits for its distribution to their several floors and rooms.

The above computations are qualified as theoretical, since it is assumed that the efficiency of the motile machinery employed is unity instead of the one-third or one-fourth usually available in such mechanism. It would be interesting and instructive to examine a description of the apparatus it is proposed to use for the propulsion of such large volumes of air under the high pressure demanded. To effect the pressure by blowers, the velocity of their blade tips would have to exceed that of a rifle-shot, and a twenty-foot diameter fan must make the quite impossible performance of 1,800 revolutions per minute.

Let the question be simplified to that of supplying air to two such buildings as the newer ones of the Massachusetts Institute of Technology, they monopolizing an entire main, and being located at its extremity. The theoretical horse-power required would be some 345, against a present actual mean of 15 or so, for the supply of 5,600,000 cubic feet of air an hour.

Second, The method proposed for warming the air supplied through the mains by means of a hot-water pipe with return bend, as shown in the cut reproduced by *Science*, and described in the company's pamphlet, is defective.

The pamphlet states that the pressure within the pipe is not to exceed five pounds, and that the heat-loss in the water is not to exceed five per cent. The statement, though somewhat ambiguous, may reasonably be made to mean that the water starting with a temperature of 227° will return to the heater cooled through 12°.

If the sole aim of this warming of the air were to raise it to the temperature of comfort, say 70°, before supplying it to the buildings, and the matter of heating the buildings were excluded from consideration, the volume of water to be moved through the pipe would, on a day of average winter temperature, be nearly 200,000 gallons an hour, or a flow rate of nearly five miles an hour through a fourteen-inch pipe.

For extreme weather this quantity must be more than doubled, and, if the heating of the buildings is to be included, the duty of the heating system must be quadrupled.

A study of the mechanical part of this heating problem is not here presented.

Presumably the small fraction of the exhaust steam from the air and hot-water propelling engines required for heating purposes would be utilized. Enough would still remain for the comfortable heating of some halfscore of adjacent towns of rival size.

A description of the arrangement of the proposed pipe or other heating surface, so that cumulative heating effect should be avoided, and a uniform temperature maintained throughout the mains, would interest many of your readers.

Third, The required inequalities of temperature in the air-supply to various buildings, and to the various parts of the same building, cannot be furnished from one supply source maintained at a fixed temperature.

For the shady or the windward side of a dwelling whose air is "changed" but once an hour, the air-supply temperature may need to be in some weathers 190° or 200°; and on the sunny or the leeward side, or in the sleeping or sick room, twenty to thirty de-