"That delineation and construction are natural, early, and simple modes of thought-expression, cannot be doubted, and needs no demonstration before this council. That these modes of mental activity should be trained at school, where the sense-perception, the memory, the reasoning-power, and the verbal expression of thought, are trained, also needs no demonstration. The statement must be accepted as true as soon as it is made; for the proposition that certain mental powers shall be intentionally omitted from the school-training has not as yet found any conscious defenders, though numerous cases might be cited where men have unconsciously argued in support of it.

"The powers of thought-expression by delineation and by construction are among the activities for which Froebel made so prominent a place in his kindergarten. The principle underlying the kindergarten and the manual-training school is one and the same. It must be recognized, and its application extended to the primary and grammar grades. Then we may speak of the manual-training movement and mean something definite thereby, and we may still speak of the manual-training school and mean a school which represents the principle of the manual-training movement in the instruction it offers to pupils of high-school age.

"We urge upon the council the determination to use the phrase in this sense. It is the sense which is warranted by educational history, and the only sense that views manual training as involving the application of a great pedagogic principle, and not as an attempt to improve the methods of high-school instruction alone. We therefore submit the following resolution, and recommend its adoption: —

"*Whereas* there are several and conflicting uses of the term 'manual training,' be it hereby

"*Resolved* that the New Jersey Council of Education defines 'manual training' as 'training in thought-expression by other means than gesture and verbal language, in such a carefully graded course of study as shall also provide adequate training for the judgment and the executive faculty.' This training will necessarily include drawing and constructive work, but experience alone can determine by what special means this instruction may best be given."

SCIENTIFIC NEWS IN WASHINGTON.

Sanitary Precautions in Florida. — That "Bureau of Health." — Two Other Bills. — Oil on Water. — The Ores of Nickel Mountain. — Fossil Wood. — National Geographic Society. — Philosophical Society.

Sanitary Precautions in Florida.

THE last three of the weekly health reports of Surgeon-Gen. Hamilton have presented shocking accounts of the deplorable sanitary condition of the cities of Florida, and of the general neglect of health precautions, especially in sewage, that prevails there. The correspondent of "Science" called on Gen. Hamilton, and asked some questions bearing on these reports, eliciting the following statement.

"In general terms," said Gen. Hamilton, "it should be understood that the condition of the towns in Florida, so far as investigated, has revealed a shameful neglect of the commonest sanitary precautions. In Jacksonville the sewage system is quite inadequate, the sewers having been made largely of terra-cotta pipe; and in many of the towns cesspools were constructed where the contents were allowed permanently to percolate the soil. In view of the theory concerning yellow-fever germs being in the alimentary canal and found in the excretions, the conditions existing were exactly those most favorable to the propagation of the disease. If the people of Florida would themselves obey the ordinary laws of self-preservation, and look after their own interests, they would have much less trouble with epidemics. The Federal Government is enforcing in the yellow-fever districts more radical measures than ever before known in the history of this country: establishing gratuitous public laundries for the cleansing of possibly infected bedding and clothes, and fumigating with the consent of municipalities."

That "Bureau of Health."

The following report to the secretary of the treasury, here printed for the first time, will be likely to seal the fate of the bill which was referred to him for his judgment as to its expediency: —

TREASURY DEPARTMENT,
Office of Supervising Surgeon-General,
U. S. Marine Hospital Service,
Dec. 28, 1888.

The Hon. C. S. FAIRCHILD, Secretary of the Treasury.

Sir, — I have to report, concerning House Bill No. 11,454, that this bill, which offers a reward of $100,000 to any person of any nationality who discovers the true germ of yellow-fever, is wrongly conceived in my judgment, and should not pass. It was recently made the subject of strong ridicule in the American Health Association, and not a word was raised in its defence. The effect of the mere introduction of the bill has been to flood the bureau with "crank" letters of every description, many of the remedies recommended being preposterous. It will be better for the government to pay the prize as a reward of merit *after* the discovery shall have been made and established. The history of prizes for the discovery of remedies in times past is a blot on legislation not only in our own country, but in several countries of Europe; and the rewards bestowed have generally turned out to have been improperly given. It is recommended, therefore, that the bill be indefinitely postponed. Respectfully yours,

JOHN B. HAMILTON,
Supervising Surgeon-General, M.H.S.

Two Other Bills.

Dr. Hamilton has reported favorably on so much of House Bill No. 7,731 as provides for the establishment of a public laboratory in Washington; also on House Bill No. 11,533, providing for a board of yellow-fever commissioners to investigate the sanitary condition of foreign infected places, and to provide for the co-operation of Spain and Mexico.

House Bill No. 11,723, for the creation of a bureau of health, etc., referred to the secretary of the treasury, is reported back to the committee adversely by Dr. Hamilton, whose opinion the secretary asked. It is held that the twenty experts which the bureau would call for could not be had for two reasons: 1. Because there are no such experts whose practice has been limited to scarlet-fever, diphtheria, small-pox, and the like; 2. If there were, $1,200 a year would not be adequate compensation.

Oil on Water.

The United States Signal Office publishes accounts of eleven vessels which report that they used oil with great effect during the hurricane off the Bahamas in November. The following are some of the reports: Bark "Auburndale" "used oil with great success, safety of vessel and lives of all on board attributed to its use, only four gallons needed;" bark "Hale," "fish oil used in bags at Catheads, vessel and crew saved by its use;" brig "Hussey," "blew a hurricane, lay to, and used oil constantly, thus saving the vessel;" schooner "St. Croix," "in constant danger, but all damage prevented by timely use of oil;" barkentine "Retriever," heavy gale, "but rode it out without breaking a rope-yarn, thanks to the use of oil." The vessels seem generally to have used only a few gallons of oil each.

The Ores of Nickel Mountain.

The interesting ores of Nickel Mountain, Oregon, are described in Dr. Day's new volume of "Mineral Resources of the United States."

"The mountain has an elevation of 2,800 feet above Riddle, or about 3,600 feet above the sea. At an elevation of 1,000 feet above the valley, the nickel ores are first found; and from this height, on all sides of the mountain to the very summit, are found beds of ore covering areas from one to twenty acres, and averaging six feet in thickness. The ores are invariably found either in bowlders disseminated through a highly ferruginous earth, or in a stratified bed underlaid by an altered serpentine. In places the ore in these beds is not more than a foot in thickness, but in others it will run to a depth of thirty feet. Nothing like vein-formation has yet been encountered. Occurring with the nickel ores is chromic iron and chalcedonic silica. Sometimes the latter contains nickel oxides, forming the beautiful gem stone chrysoprase. Nearly all the hydrated nickel and magnesium silicates are found in greater or less quantities at these mines. No nickel minerals other than the sili-

cates have been found. The ore bodies have been developed by numerous cuts, drifts, shafts, and quarries, all of which are in ore that in bulk contains five per cent of nickel. Some two thousand tons of this class of ore are now on the various dumps. No works have yet been erected for treating the ore, but it is confidently expected that the year 1888 will see this inaugurated.

"A specimen of the unaltered country rock from Nickel Mountain was determined by Mr. George P. Merrill, of the National Museum at Washington, as chiefly olivine, with a mineral of the pyroxene group, probably bronzite. The nickel silicates found near Webster, Jackson County, N.C., are the result of the decomposition of an olivine rock, and the occurrence in southern Oregon can be similarly explained. The association with chrome ores adds to the analogy between the two occurrences.

"Lately Professor F. W. Clarke has further substantiated the view advanced by Mr. Biddle as to the genesis of these silicates of nickel, and has extended the comparison to the silicates from New Caledonia."

Fossil Wood.

In a paper read before the Biological Society, Washington, F. H. Knowlton comes to the conclusion that the fossil wood of the Potomac formation is all coniferous. It exists under two different conditions; viz., as a silicified wood, and as lignite, which, owing to the great pressure to which it has been subjected, is much metamorphosed and distorted, and is incapable of specific determination. The former, very perfectly preserved, belongs to two genera, — *Cupressinoxylon*, with four species; and *Araucarioxlon*, with a single species.

National Geographic Society.

The National Geographic Society held its annual meeting for election of officers, presentation of reports, etc., on Friday evening, Dec. 28. The secretaries and treasurer presented their annual reports, and officers were elected for the year 1889 as follows: president, Gardiner G. Hubbard; vice-presidents, H. G. Ogden, G. L. Dyer, A. W. Greely, C. Hart Merriam, A. H. Thompson; treasurer, C. J. Bell; secretaries, Henry Gannett, George Kennan; board of managers, Cleveland Abbe, Marcus Baker, Rogers Birnie, jun., G. Brown Goode, C. A. Kenaston, W. B. Powell, O. H. Tittmann, J. C. Welling.

Philosophical Society.

The Philosophical Society, Washington, elected its annual officers as follows: president, J. R. Eastman; vice-presidents, C. E. Dutton, G. K. Gilbert, G. Brown Goode, H. H. Bates; treasurer, Robert Fletcher; secretaries, W. C. Winlock, J. S. Diller; members at large of the general committee, W. H. Dall, J. H. Kidder, H. M. Paul, F. W. Clarke, C. V. Riley, R. S. Woodward, L. F. Ward, G. W. Hill, Marcus Baker.

COMMERCIAL GEOGRAPHY.

The Iron Industry in the Southern States.

IN the "Report on the Mineral Resources of the United States for 1887," recently issued by the United States Geological Survey, James M. Swank gives an interesting report of the recent rapid growth of the Southern iron industry. The activity which was so conspicuous in the latter half of 1885 and in 1886 was continued in 1887 and during the first half of 1888. This activity has been chiefly displayed in the erection of blast-furnaces for the manufacture of pig-iron.

Since the beginning of 1886 there have been built in the States south of the Potomac and the Ohio Rivers twenty-one large and well-equipped furnaces, and fourteen furnaces were in course of erection in those States on July 1, 1888. The total number of furnaces which were in blast on that date, not including those of Missouri, was 109.

There was much comment in Southern newspapers concerning the probable scarcity of a supply of good coke for the new southern furnaces, and the prediction was freely made that some of the new furnaces would be compelled to remain idle until new coal-fields could be found, or fields already discovered could be developed. With the lapse of time it has been found that the supply of good coke from Southern coal-fields has fairly, if not entirely, kept pace with the increasing demand for this fuel for furnace use. New coke-ovens have been built in connection with newly opened coal-mines, and the quality of coke obtained from the coal of some of the older mines has been improved by more careful methods of selecting the coal and making the coke. There is particularly no longer any apprehension of a scarcity of coke for the supply of the furnaces at Birmingham and in its vicinity. A great portion of the supply is furnished from the New River coal-field in West Virginia, and the Pocahontas coal-field in Virginia. The coke from these fields has been shipped to Carondelet, Mo., and Chicago, at which places it has been used in blast-furnaces in competition with Connellsville coke.

The future of the iron industry of the South appears very promising, as there are certain advantages which other parts of the United States do not enjoy. In Alabama and Tennessee, ores and fuel are found in close proximity, and unskilled labor is cheaper than in the North; but, on the other hand, much of the pig-iron made in these States must be hauled to distant markets at great expense. In fact, no section of our country possesses a monopoly of all the advantages for producing iron and steel. Pittsburgh has natural gas for its rolling-mills and steel-works, and is close to the Connellsville coke-field, but it brings its ores long distances. Chicago is nearer than Pittsburgh to Lake Superior ores; but it is hundreds of miles away from Connellsville coke, and it lacks natural gas as a substitute for raw bituminous coal. In New England but little iron and steel in their crude forms are now made, but the skill in their manipulation which has been accumulated in two hundred years yet remains. The iron industry of the Rocky Mountain region will always have the stimulus of a home market remote from destructive competition. There is room in almost every section of this great country for the iron and steel industries, which have in later years been so wonderfully developed, and which are destined to expand still further.

FRENCH KONGO. — In order to develop the resources of the French Kongo, it has been proposed to establish a line of steamers running between some French port, Senegambia, and Gabun-Kongo. It is estimated that the line will require an annual subsidy of $140,000. While the Marseilles Geographical Society indorses this scheme, Lieut. Mizon, who spent many years in the interior of the colony, and to whom we owe our present knowledge of its topography, opposes it, on the ground that the trade of the colony is unable to sustain an additional line of steamers. His remarks show that the French Kongo has developed very slowly since 1870. In that year the colony embraced the Bay of Gabun and the delta of the Ogowe. Its trade amounted to $500,000 annually. In the following years it did not increase; but, after De Brazza's exploration of the upper Ogowe, more caoutchouc and ivory were shipped. At the same time, however, the trade in dye-woods, ebony, and wax, declined on account of the devastation of the forests. The total amount of import and export in 1882 was estimated at about $2,000,000. Since that time it has not increased. This trade is principally in the hands of an English and a German house, who have regular lines calling in all ports of any importance between Madeira and the mouth of the Kongo; and even to them the produce of the Gabun is of little importance as compared to that of other parts of the coast. The slowness of progress in the French Kongo is principally attributed to the lack of communication with the interior and the absence of factories on the head waters of the rivers. The resources of the interior must be developed, and the natives induced to sell their goods to trading-posts in the interior, which will thus be able to collect enough valuable cargo to make the trade between Europe and Gabun more remunerative. Lieut. Mizon's considerations are of special interest when compared to the actions of the Belgian Company trading with the upper Kongo. The latter concentrates all its energies upon the establishment of good communication with the upper Kongo, and to a systematic exploration of the commercial products of that region. Undoubtedly its endeavors will finally result in producing a remunerative traffic between the remote regions of Central Africa and Europe.

BOOK-REVIEWS.

Favorite Authors for Children. By Mrs. FRANCES A. HUMPHREY. Chicago and Boston, Interstate Publ. Co. 16°.

THIS little book contains brief sketches of certain authors who have written more or less for young people, though only a few of