easy to forecast the outcome of any plan for securing competent teachers and properly protecting them when secured; but that proposed for New York promises well, combining as it does examination by an impartial body, and appointment by borough (local) boards familiar with the conditions of particular schools. The Charter awaits legislative sanction; meanwhile, through the changes in the supervisory corps and the activities aroused, new life is being infused into the system as it is. At this moment the question of high schools is uppermost, the Board of Education having decided to ask a legislative appropriation of $2,500,000 for four schools of this grade. The absence of such provision has long been felt as a serious evil. The law requires children to attend school until they are fourteen; but a large proportion finish the grammar school course at twelve years, and then no facilities await them outside of the City College and the Normal College. Both of these schools are overcrowded, especially in the lower divisions and neither of them can fulfil its mission if obliged to meet the demands of children under fourteen. High schools would not only provide for those pupils who do not expect to complete a college course, but could also be adjusted to widely different demands. The experience of England at this point is exceedingly instructive, the law of 1870 provided for elementary schools only; but it has been impossible to maintain the limit; and first extra seventh grades, and finally veritable high schools have arisen under pressure both within and without the system. London, Manchester, Birmingham and Sheffield, have all taken the course which New York is now entering upon. As a preliminary stage in the development of the high schools, an advisory committee was formed and commissioned to make an investigation of the large high schools of the West. The party consisted of four assistant superintendents to one of whom (viz. Mr. Marble) the West and its resources are familiar. The party were greatly impressed with the laboratories and gymnasium of the Kansas City high school, with the manual training school at Indianapolis and the fine equipment of the Chicago high schools. The Indianapolis manual training school, they report, as greatly surpassing the mechanical department of the New York City College. It would take the city, they say, several years to develop so complete an institution. In the matter of space alone it is a model, the workshops being each 100 feet long and in width 40, 50 and 60 feet respectively. The importance of the thorough treatment of commercial branches is especially emphasized for a city like New York; but this department cannot be forced. It is of first moment to arrange the general curriculum; and here the effort will be to relieve the grammar schools of some branches that have been forced into them because there were no high schools and the City College of branches that more properly belong to the high or preparatory school.

By this means the standard of the college can be raised—a movement in line with the development at Columbia and with that proposed by the Regents for the State generally. In preparing a high school course unhampered by previous conditions the Committee may help solve a problem that is everywhere agitated. It is hoped that they may find a way to avoid overcrowding, and that they may also utter some decisive word as to the spirit and methods proper to the high school period. Serious difficulties have arisen in some cities from the effort to employ university or "Seminar" methods with youth who require first the discipline of exactness and concentration.

Sanitary.

The Ideal Doctor.

THE great pathological anatomist, Billroth, was asked to give his advice to a young man, named Robert, as to the expediency of the latter's becoming a physician. Some points in his reply are worthy of note, not only among young men who are thinking of becoming physicians, but among the public which employs them. He says:

"The doctor does not lie altogether on a bed of roses. Competition grows constantly more fierce; in the beginning things generally come hard. . . . The state of entire satisfaction which ensues on the passing of the examinations is gradually undermined by the discovery that our knowledge is but fragmentary, that in those cases where we would most gladly render assistance we often fail of doing so; often, too, we are harassed as to the proper course to pursue. . . . One must rest content with doing his duty to the best of his knowledge and belief. A man's greatest blessings are then met with in the shape of a placid and loving wife and undisputed domestic happiness. Hardly, however, have you reached your home prepared to enjoy these pleasures when there comes a knock on the door, and duty calls you out again into the cold and stormy night. . . . If he has a true vocation for medicine he need not take this into much account.

"'What special quality must one possess in order to be a good physician?' Nothnagel, the great authority on nervous diseases, said lately, in an address to students: 'Only a good man can be a good physician'; and I too, share his opinion. It is the supreme regulator of the inner as well as of the outer effect of the physician's actions. To the phrase 'good man' I would like to add the words 'well brought up'; that is, in a family permeated by a spirit of charity toward all mankind. . . . He must be actuated by an uncontrollable impulse to help other unhappy creatures; and the experience of later life will have led him through reflection to the conviction that, however eagerly the man of moral training may chase after happiness, he will ultimately find true happiness to lie in making others happy to the extent of his ability. . . . To enable the physician to spend himself freely, he must have accumulated a rich fund of knowledge; and in possessing such a treasure the physician enjoys the special privilege of seeing it increase directly in proportion to the lavishness with which it is spent. Activity in the practice of medicine leads to increase in experience, development of judgment, impels us to supply the deficiences in our knowledge, enables us to follow the progress of the art of medicine, which itself results from the progress of science. A physician who gives himself up to critical, unprejudiced observation sees his own stock of experience and knowledge increase, in the very dispensing of it for the relief of others—always provided that he is a good man, with a strong sense of duty, has a sound understanding, and takes delight in work and in his calling."

In an address to medical students on "Scholastic and Bedside Teaching," Dr. Holmes was recalling the career of Dr. James Jackson, who was one of the best physicians Boston ever possessed; and he lived to the patriarchal age of ninety. He was teacher of Theory and Practice in the Harvard Medical School, and he addressed a volume to medical men under the title of "Letters to a Young Physician"; and Dr. Holmes calls the prefatory introduction to this, as fit to go with the three great prefaces, not for any learning or rhetoric—tho charmingly written—but "for a spirit flowing through it to which learning and rhetoric are but as the breath that is wasted on the air, to the blood that warms the heart" And to conclude the picture of the high ideal of what the doctor should be, he quotes a eulogy of Heberden—an English physician celebrated for his perfect conduct at the side of the sick-bed in the last century:

"From his early youth he had always entertained a deep sense of religion, a consummate love of virtue, an ardent thirst after knowledge, and an earnest desire to promote the welfare and happiness of all mankind. By these qualities, accompanied with great sweetness of manners, he acquired the love and esteem of all good men, in a degree which perhaps very few have experienced; and, after passing an active life, the with and uniform testimony of a good conscience, he became a eminent example of its influence, in the cheerfulness and serenity of his latest age."

He too lived to be ninety.

Dr. Jackson, like the great Abernethy, would have delighted in the better day that we live in, because he was a profound believer in all that we now condense into the word hygiene—air, meat and drink, sleep, cleanliness; in short, all methods of keeping well, as opposed to "the vast community of quacks, with or without a diploma, who think the chief end of man is to support apothecaries, and are never easy until they can get every patient upon a regular course of something nasty or noxious. Dr. Jackson was punctual and precise in his directions as to diet, air and exercise, and would none of the "about so much," "about so often," "about so long," that really ruins the practice of some men.

Science.

THE great leading object in nature in providing nectar and fragrance in flowers is still a subject of discussion in scientific journals. That some flowers are unable to fertilize themselves and must have the aid of insects is certain; and it is also certain that in many cases this fertilization is accomplished by the insect while on foraging expeditions for the sweets which flowers furnish. But these well-ascertained facts cover but a small portion of the ground. The fertilization is as often accomplished by insects in search of pollen as in search of honey; but it is not contended that pollen is given to flowers in order to make them attractive to insects, as is said of the sweet secretions. It is believed that nectar must be of some direct value to the plant, as well as the pollen; and the effort is to find out what is the chief office of nectar in the life history of the flower. Since thought has been turned in this direction a new class of facts is being recorded. In California grows a lupine (*Lupinus confertus*) which often takes exclusive possession of large tracts of land. It does not yield a particle of nectar. It has bright crimson-violet flowers, and these are produced in such abundance that the color of the mass may be noted at long distances. But it has fragrance. This is so powerful that the traveler notes it long before he meets with the growing plants. The pollen-collecting insects visit the flowers in great numbers. It is believed that cross-fertilization can be effected by these pollen-collecting intruders. At any rate, the fragrance would be thrown away if it were provided for the mere sake of advertising for insect aid—as the other numerous species of lupine which have no fragrance are as freely visited by bees for the sake of the pollen as is this species. The cross-fertilization is effected as freely without fragrance as with it. This point has been made before, tho with no reference to the philosophical questions involved. Fragrant flowers are the exception, not the rule. In some families of plants where there may be several scores of species, only one or two are fragrant. This has been especially noted among the wild species of violet. But no one has so far been able to note the slightest advantage in life-economy which the sweet-scented ones possess over the odorless ones.

....The nautilus has hitherto been so inaccessible to the student that its embryology has never been examined. At length Dr. Willey, late of Columbia College, has gone to New Guinea, and after keeping numbers of the nautilus in a large cage, sunk to the depth of three fathoms, in the sea of the Loyalty Island, has had the good fortune to secure the spawn. Each egg is as large as a grape and is deposited separately by the mother nautilus, whereas they are deposited in bunches by the squid. The nautilus is trapped in baskets by the natives of some of the Melanesian Islands and used as food.

....A chameleon from the Cape of Good Hope was seen by Mr. Blakiston to turn white with fear, having been saved from the attacks of a cat. The most extraordinary thing about this lizard is the wonderful way in which the two eyes work quite independently of each other and "enable it to survey comfortably objects in quite opposite directions."

Biblical Research.

A VALUABLE gift has been made to the British Museum by Mr. H. Martyn Kennard, who contributed half of the expense toward recent excavations in Upper Egypt. In the division of the results of these excavations, a splendid and colossal *uas*, or scepter of a divinity, fell to his share, and he at once presented it to the Museum. The excavations in question, we read in the London *Athenæum*, were carried on by Prof. Flinders Petrie, at Nubt, near Nagada, with the result of uncovering the remains of a temple of Set. Among the temple-chambers one was found to contain a quantity of fragments of pottery. These were brought to London and carefully examined. Altho at first they were supposed by Professor Petrie to belong to a number of different objects, it was found that, in reality, they were all portions of a colossal scepter. After long and careful labor the *uas* was restored, and, altho several pieces were missing, the general structure of it is clearly defined. The shaft measures five feet in hight and six inches in diameter. The upper portion is curved, and terminates in a head, probably of Set; the head measures two feet, making a hight of seven feet in all. Along the length of the shaft is drawn in fine characters an inscription; and there also appear some cartouches of Amenhotep II, of the eighteenth dynasty. The paste of the pottery is composed of a white sandy frit; after a first baking this was incised, the dark glaze of the inscription let in, and the whole fired with a rich blue glaze. This remarkable specimen will be prized for its technical as well as its artistic merits. After the *uas* was set up, it was discovered that an important piece of the inscription was in the Egyptian collection of the Rev. W. MacGregor, of Tamworth. This he generously presented to the Museum. It is possible that other of the missing pieces may exist in private collections.

....*The Revue Archéologique* contains an account of a paper read before the Academy of Inscriptions in Paris on an archaic Babylonian inscription of a period of from 3700 to 4000 B.C., which gives an account of a sort of treaty of delimitation between the province of Sirgulla, in Southern Babylonia, and that of Gisban. The translation has not yet been published; but it would be of special interest, because it is likely to settle the question of the position of Gisban, which means "The Land of the Bow," and which has been identified by Professor Hilprecht with Harran in Mesopotamia. According to Professor Hilprecht, Gisban was the center of the kingdom of Lugal-zaggisi, who reigned from Elam to the Mediterranean Sea, considerably more than 4000 B.C. Other Assyriologists have very much doubted whether at that early period Harran could have been the capital of such an empire, and they have supposed Gisban to be a district in Babylonia, near Elam.

....The metrical system of Old Testament poetry is an exceedingly fascinating field of research, but one in which there are about as many theories or hypotheses as writers. In the last twenty-five years Ley, Bickell, Gietmann, Neteler, Budde, Briggs, Gunkel, Dr. H. Müller, and others have advanced views of their own on this subject, but without any agreement even in principle. A new contribution to this department, from the pen of Hubert Grimme, is found in the last issue of the *Journal* of the German Oriental Society, Vol. 50, No. 4, pp. 529–584, and is to be concluded in the next number. Grimme approaches nearer to Ley than to any other investigator, but generally goes his own way. His theory, which must be closely studied to be understood, is based on the word and verse accent of the Hebrew as well as on the quantity of the syllables. It is very complex, but is illustrated profusely by examples.