SCIENCE

FRIDAY, NOVEMBER 25, 1887.

NOTHING IS GAINED by maintaining profound secrecy and mysterious silence regarding the affairs of any institution that appeals to the general public for support and encouragement. This is especially true in the case of educational institutions; and, as a rule, those colleges which have frankly stated their financial condition and needs have been the first to be provided with the means of readjusting and supplying them. The more progressive of the alumni of Columbia College have for many years insisted that that college was out of touch with the community because of the unwillingness of the trustees to make known their plans and to ask for financial aid. There was unquestionably much force in this position; and it was not surprising, therefore, that when, three years ago, after a century of dignified reserve, an appeal was finally made for four million dollars to equip the university, no response was received. It is to the credit of the alumni that they persistently criticised the policy of the trustees, until now the point has been yielded by the latter. Hereafter the alumni and friends of the college will receive each year a digest of the annual reports of the president and treasurer on the state of the college. The first of these digests has just been issued, and a copy is before us. We need not refer to that portion of it which is taken from President Barnard's report, for that was commented on in *Science*, No. 244. The abstract of the treasurer's report, however, is new, and it presents many points of interest. It shows the total income last year to have been $388,544.13, and the total expenditure $365,582.25. The surplus was $22,961.88. By far the major portion of the income ($224,062.61) was derived from rents, the next largest item being students' fees ($142,127.50). Of the amount expended, $249,199.67 went for salaries of professors and instructors, and only $8,744.25 was used to buy books with. The bonded debt of the college is shown to be $330,240, and the available cash to meet it with will be, by June 30, 1888, $239,317. It will therefore be seen, that while Columbia is heavily in debt at present, yet in two years at most the debt will be paid, and then a large annual surplus will be available for the much-needed extensions. It will be a glad day not only for Columbia, but for the cause of university education in this country, when its board of trustees has sufficient money to vote a generous sum for the purchase of books, to properly equip the graduate departments in philosophy and social science, — in which particularly the demand exceeds the supply, — and to make marked extensions of the scientific departments. We hope yet to hear that President Barnard has been able to work out these problems, and to crown his distinguished and successful administration by the creation of a university faculty of philosophy — in the German sense — which shall be absolutely distinct from the faculties of arts and mines, as at present organized. In this step lies the possibility for Columbia's becoming the metropolitan university.

BY THE SUDDEN DEATH of Rev. Edward Thring of Uppingham School, England, the cause of sound education is deprived of the services of one of its ablest and best advocates. Mr. Thring's name is as familiar on this side of the Atlantic as in Great Britain, and his 'Theory and Practice of Teaching' has had many readers in this country. Mr. Thring was born in 1821, and was just completing his sixty-sixth year when he died. For thirty-four years he has labored as a teacher, having been made head master of Uppingham School in 1853. When Mr. Thring went to Uppingham, he found a local grammar-school of an Elizabethan foundation. He leaves it one of England's great public schools. Mr. Thring's cardinal principle was the necessity for giving every pupil individual care, and not treating a whole school as a mass. The faithful application of this principle was one cause of his great success as an educator. As a speaker and writer he was direct and inspiring, and his voice and pen will be greatly missed. Mr. Thring stood side by side with Mr. Quick and Mr. Fitch, as one of the three great public educators of England.

THE FORTHCOMING CROP REPORT from the Department of Agriculture will contain an interesting article from J. R. Dodge, the statistician of the department, on India in wheat-competition, that will go far toward dispelling the growing fear that competition from India would seriously affect the wheat-growers of the United States in the markets of Europe. Mr. Dodge points out the significant facts, that, while a large increase in the wheat-growing area of India is impossible, the annual home consumption of wheat is constantly increasing; and that, while it is true that with improved methods of agriculture the present acreage will become more productive, the increasing prosperity of the people will bring about a corresponding increase in wheat-consumption. Mr. Dodge thinks that much of the increase in the exportation of wheat from India which followed the opening-up of railroads into the interior was due to the shipping of the accumulated surplus that had been stored up for use in the famine years. The conclusion to be drawn from Mr. Dodge's article is, that the export for 1887, of about 42,000,000 bushels, is very near the maximum that may be expected rom India.

ASPECTS OF EDUCATION.

The English Public School.

THE term 'public school' is difficult to define. In England it has a meaning different from what it has in America. The American public school is a school supported by the community, and open to all the world. When it is said that public schools are the backbone of the American system of education, it is implied that there exists all over America a number of schools affording a liberal education, either free or very inexpensive, accessible to all classes of the community alike. An English public school implies something exclusive and privileged. A public-school man is different from other men. The question as to whether a particular school is a public school or not, depends not upon its size or its efficiency, but upon its social rank. The American public schools are day schools: the English public school in the strict sense is essentially a boarding-school. Our public schools are few in number, confined to particular districts, costly, and very diverse in individual character; yet it is said that they represent more completely than any other English institution the chief peculiarities of our national life. It is the public school that forms the typical Englishman: it is the ordinary boy of the upper classes who gives his character to the public school. We have to inquire, first, what are the English public schools? second, how did they come to be what they are? third, what are their principal characteristics, and what relation do they bear to the educational system of England?

When the English Government undertook, some twenty-five years ago, to inquire into the condition of our secondary education, nine schools were singled out from the rest as pre-eminent. These were Winchester, Eton, Westminster, Charter House, Harrow, Rugby, Merchant Taylor's, St. Paul's, and Shrewsbury. Captain de Carteret Bisson, in his valuable work 'Our Schools and Colleges,' apparently disputes the right of the last three, and reckons our public schools at six. These six, between them, do not educate much more

than four thousand boys; and yet they are so typical of all schools which may have a claim to the title of public, that we may conveniently confine our consideration to them. Of these, Winchester dates from the fourteenth century; Eton from the fifteenth; Westminster, Harrow, and Rugby from the sixteenth, these three having all been founded within eleven years of each other; and Charter House from the seventeenth. Westminster, the oldest of the schools, has probably kept its character most unchanged. It has never been a fashionable or a court school. It has maintained unimpaired its close connection with New College at Oxford. Nothing can show more clearly the strength and unity of English traditions than the fact, that, five hundred years after the establishment of the two foundations of William of Wykeham, they should stand in the face of England, holding the highest place, one as a college, and the other as a school. Eton, the next on our list, is confessedly the first of public schools, but it was not always so. During the first eighty years of the seventeenth century, Westminster undoubtedly held the position of pre-eminence. Dr. Busby, who read the prayer for the King on the morning of Charles I.'s execution, and who refused to take off his cap in the presence of Charles II., was the first schoolmaster of his time in England. But Westminster was faithful to the Stuarts: Eton supported the cause of the Whigs. Its supremacy, beginning in the reign of William III., continued in that of Anne, reached its height under the Hanoverian kings. George III. took a strong personal interest in the school. Eton boys walked on the terrace of Windsor Castle in court dress, and the King often stopped to ask their names and to speak to them. William IV., with boisterous good humor, continued the favor of his dynasty. He took the part of the boys in their rebellion against the masters, and he used to invite the boys to entertainments, at which the masters stood by and got nothing. During this period Eton became a political power in England. The upper school at Eton is decorated with the busts of statesmen who swayed the destinies of England, and who were the more closely connected together from having been educated at the same school. Chatham, North, Fox, Grenville, and Gray are among the ornaments of that historical room. Eton and Christ Church had the monopoly of education for public life, and the claim of the school to this distinction received its fullest recognition when Lord Wellesley, after a career spent in the most important offices of the state, desired that he might be laid to his last rest in the bosom of that mother from whom he had learned every thing which had made him famous, successful, and a patriot. Better known, perhaps, is the boast of his brother, the Duke of Wellington, that the battle of Waterloo was won in the playing-fields of Eton.

Charter House, established in London, has held since its foundation a position very similar to that of Winchester, not of great importance in politics or fashion, but highly influential and respected. These four schools were probably founded for the purposes which they have since succeeded in carrying out. Eton was always a school for the governing classes. Winchester and Charter House have received the uninterrupted support of the gentry and clergy of England. The history of Harrow and Rugby has been different. They have been lifted by circumstances into a position for which they were not originally intended. They were founded as local schools, — one in the neighborhood of London, the other in the heart of the midlands, — for the instruction, first of the village lads, and then of such strangers as came to be taught. But they have reached, owing to special circumstances, a position equal to that of any of their rivals. Harrow emerged from obscurity in the middle of the eighteenth century, owing, as it is said, her success to head masters who were sent to her from Eton. Rugby is known throughout the world as the school of Arnold, who was head master from 1827 to 1841. Even before his time it had attained a high rank among English schools; but he, followed by a line of distinguished successors, left it in scholarship and energy of thought at their head. Rugby and Baliol are to English education after the reform bill, what Eton and Christ Church were before it. This sketch will show how different the genesis of our public schools has been, and what various courses they have pursued to arrive at the same conclusion.

We will now briefly trace the history of the education they aim at. Their curriculum is essentially classical: indeed, a public-school man means, in common parlance, one who has been educated mainly in Greek and Latin. The two oldest schools, Winchester and Eton, founded before the Reformation, naturally began with monkish learning. There was a great deal of grammar and a great deal of church-going. The pupils were children, and were treated as such. Westminster was founded after, and in consequence of, the Reformation, and the breach with the old learning necessitated new arrangements.

The author of the Protestant curriculum of public education was John Sturm, the friend of Roger Ascham, the head master of the great school of Strasburg during a large portion of the sixteenth century. A complete account of Sturm's methods and organization is preserved, and we may be sure that its main outlines were adopted at Westminster and at Eton. Latin grammar and Latin style were made the principal subjects of education. The school was launched upon the full flood of humanism. The connection between a scholar in the narrow sense, that is, a man not of erudition but of finished taste and polished style, and the gentleman, was now fully established. Sturm was so despotic in the arrangements of his school, that he not only laid down what boys were to learn at each epoch of their career, but he forbade them to learn any thing else. It was as great a fault to begin a subject prematurely as to neglect it in its due time.

Many of Sturm's arrangements are familiar to public-school men who are now living, but in the following century they underwent a further change. This was due to the Jesuits, who obtained their reputation partly by their devotion to the study of Greek, and partly by the pains they took to understand the individual character of their pupils. The Jesuits have probably done more harm to sound education than any prominent body of men who ever undertook the task. They had two objects in view, — to gain the favor of the rich and powerful, and to prevent the human mind from thinking. Humanistic education skilfully employed was an admirable instrument to this end. It flattered the pride of parents, while it cheated the ambition of scholars. The pre-eminence given in education to original Latin verses is typical of the whole system of the Jesuits. No exercise could be more pretty and attractive, or bear more clearly the outward semblance of culture and learning, yet no employment could more effectually delude the mind by an unsubstantial phantom of serious thought. The sturdy humanism of Sturm became corrupted by the graceful frivolity of the Jesuits, and in this condition public-school education remained until the efforts of a few obscure reformers, the genius and energy of Arnold and the growth of the new spirit in England, forced it into other channels.

Arnold is typical of the new public school, but we must distinguish between Arnold and the Arnoldian legend. Like other great reformers, his name has become a nucleus round which the reputations of all other reformers, good as well as bad, have coalesced. The most prominent fact about Arnold is, that he was the first Englishman of quite first-rate ability who devoted himself to school-education. The traditions of Sturm and the Jesuits shrivelled up before the manly touch of a teacher who was fit to be prime minister. After his career no one could despise the profession of a schoolmaster. What did Arnold actually effect? He taught boys to govern themselves. He substituted for a system in which the governors were allowed any license on condition that they denied it to every one else, one in which the responsibility of the ruler was rated even more highly than the obligation of the ruled. He also taught boys to think for themselves, to pierce beyond the veil of words into the substance of things, to see realities, to touch and taste and handle the matter of which they had before only talked. Thus he produced a vigorous character and a manly mind. Rugby boys, on passing to the university, thought and acted for themselves. They might be pardoned if in the first flush of enthusiasm they acted priggishly and thought wildly. But Arnold's teaching contained within it germs of much which he had never contemplated, and of which he would have disapproved. It contained the germs of the modern civilized life in schools, of which Rugby knew nothing in 1840. Far, indeed, is the cry from that dim and crowded dining-room where boys, sitting at a bare table, wiped their knives on the iron band which surrounded it, and ate their meat and pudding off the same plate, to the luxurious arrangements of a modern pre-

paratory school. It contained the germ of modern-side education. Arnold did not know that he was passing from Melanchthon to Comenius, and that the study of things once set rolling would soon displace the study of words. It contained the germs of a new confidence and friendship between boy and master quite as different from the sly sentimentality of the Jesuits as it was from the pompous neglect of the old-fashioned courtly don. It contained, alas! in germ the subjection of the master to the boy in standard, tastes, and habits, which threatens to be the ruin of our public schools. It crystallized also the idea, which otherwise might have disappeared, that a head master must be of necessity a clergyman, and that no school could be properly conducted unless its chief sums up in the pulpit every Sunday afternoon what are supposed to be the spiritual results of the week's emotions. It stamped also with permanence, by a natural misunderstanding, that conviction of a head master's autocracy which prevents the formation in England of a profession of education. The history of English public schools since Arnold is merely the carrying-out under varying circumstances of the teaching of his example, and the development, sometimes to disastrous ends, of abuses to which that example may seem to lend currency.

A few words only are needed in conclusion as to the present and future of our public boarding-schools. Nothing has altered their character more than their growth in numbers, which has been the result of popularity. In Arnold's time no public school except Eton exceeded three hundred boys. Arnold and his contemporary head masters might boast with truth that they knew every boy in their school by sight, his habits, his capacity, his friends. A school thus governed by one man, and penetrated by his influence, differed not only in degree, but in kind, from a school which has of necessity become a confederation. In a public school of Arnold's date games were still amusements. Formerly neglected and ignored by pedagogues, they became the nurse of every manly virtue when a more sympathetic eye was turned upon them. Tom Brown's school-days represents the heroism of the forties, — the high-water mark where boyish enterprise and independence reached their height under the influence of manly recognition. During the last quarter of a century, games have become a serious business, instead of the wholesome distraction of public-school life. They are organized as elaborately as the work. Masters are appointed to teach them like any other branch of study: they form the basis of admiration and imitation between boy and boy, and the foundation of respect and obedience between boy and master. It is difficult to keep large numbers of boys, with only five years difference in their ages, quiet and wholesome without a large development of games. They have been admitted to their full share in the school curriculum. A public boarding-school is no longer a place where, amidst much liberty and idleness, there reigns a high respect for character and intellect, and where the ablest boys are left ample room to fashion each other and themselves. It is a place where the whole life is tabulated and arranged, where leisure, meditation, and individual study are discouraged, and where boys are driven in a ceaseless round from school to play-room, from play-room to school, regarding each as of equal importance, and bringing into the most delicate operations of intellectual growth the spirit of coarse competition which dominates in athletics.

It is difficult to say what changes public boarding-schools are destined to undergo, or whether in an age in which education is so much extended a system so expensive and so exclusive can continue to flourish. The last few years have witnessed the growth of large public day-schools, and any development of national education would be certain to increase their number. Although the Arnoldian system is little applicable to them on its best side, yet they are of necessity free from most of the abuses to which that system has given rise. An idea may grow up that the home is, after all, the best place for children, and that children are the best safeguard of a pure and happy home. Should English society in its new development prefer a kind of education which is the normal type of all countries but our own, which improved communication makes it easier to adopt, we shall still have public schools of which we should be proud: they will continue to represent our best national qualities, but they will be very different from the public boarding-schools of the past.

OSCAR BROWNING.

THE NÄÄS SEMINARY FOR TEACHERS OF MANUAL TRAINING.[1]

IF any inquiring friend of manual training endeavors to find Nääs on any ordinary map of Sweden, he will be disappointed. It is an old Swedish country-seat, beautifully situated on the pretty lake Sävelängen, about ten hours' journey from Gothenburg. The railway from Gothenburg to Stockholm passes in the vicinity, and the intending visitor to Nääs leaves the train at Floda station. From Floda to Nääs is a short journey by boat or on foot. The two settlements are not more than an hour's walk apart.

Nääs itself is situated on the highest point of a narrow strip of land. The lake here is about thirty metres broad, and is spanned by a substantial stone bridge. The castle is attractive, but represents no particular style of architecture. On both sides of the lake are beautiful woods in which the birch and the alder predominate. The situation is as lovely as nature and art can make it.

Herr August Abrahamson bought this place about fifteen years ago. He began at once to set aside a certain portion of his great wealth, acquired as a merchant in Gothenburg, to aid the population of his own neighborhood, and to improve their condition. He began by rebuilding many of the peasants' poor houses, and by teaching them something of systematic agriculture. Afterwards he built three schools in which instruction is given free, and for their support he donated the handsome sum of 225,000 crowns, or over $50,000.

In the year 1872, Herr Abrahamson opened a school for boys from ten to fourteen years of age.[2] The curriculum of this school contains twenty-two hours weekly of instruction in religion, language, history, geography, natural science, writing, arithmetic, singing, and gymnastic and military exercises,[3] and twelve hours weekly of instruction in manual training. The manual training has in this, as in almost all the other schools of Sweden (those of Gothenburg alone are an exception), no other aim than to prepare the boys for any trade whatsoever. The aim is thus a purely pedagogic one. Manual training is treated as a means of education, and is placed side by side with the other school-studies. By means of the methodical instruction in the use of tools and in the construction of one hundred objects, carefully arranged and graded, the pupil acquires a general manual ability which is of great advantage to him, no matter what calling he afterwards follows. Besides this, the manual training furnishes a healthy physical exercise, and, with the gymnastic instruction, affords an excellent means of escape from over-brainwork. It is also found that manual training gives the pupils a love for work and an enjoyment in it, and develops in a thorough manner their independence, attention, industry, and perseverance.

In the year 1874, Herr Abrahamson established a similar school for girls between ten and fourteen years of age; and the aim of this school was not only to instruct the girls in the usual subjects of a school course, but to make them adepts in the domestic arts. In the plan of studies, twenty-one hours a week are devoted to the usual studies, and fifteen hours a week to manual instruction.

Herr Abrahamson was, however, determined to extend his philanthropy as widely as possible, and to work for the cause of education, not in his neighborhood alone, nor in Sweden only, but in general. Thoroughly imbued with the idea of working out an harmonious scheme of instruction for children, to the completion of which the greatest educators have urged as necessary a graded course of instruction in manual work, Herr Abrahamson founded in June, 1875, the Seminary for the Instruction of Teachers in Slöjd (manual training); and this institution has since acquired a wide and well-deserved reputation.

During the first five years of its existence, the seminary course had in view the preparation of special teachers for the courses in manual training. The course lasted one year. To enter the seminary, a candidate must be at least eighteen years of age, in good health, and with such preparation in school-subjects and physical

[1] From S. Rudin's Bericht über eine Studienreise.

[2] The Swedish public schools are of two distinct grades, — the elementary school, for children of from six to ten years of age; and the common school proper, for children of from ten to fourteen years.

[3] The Swedish boys receive in the public school their military instruction, and are exercised in the handling of weapons, as are cadets in other countries.