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HURRY, WORRY, AND MONEY:

THE BANE OF MODERN EDUCATION.

BY

T. PRIDGIN TEALE, M.A. Oxon, F.R.C.S.,

Surgeon to the General Infirmary at Leeds.

BEING THE PRESIDENTIAL ADDRESS DELIVERED IN THE HEALTH DEPARTMENT OF THE SOCIAL SCIENCE CONGRESS, HELD AT HUDDERSFIELD, OCTOBER 8TH, 1883; WITH AN APPENDIX.

"NOR AUGHT SO GOOD, BUT STRAINED FROM THAT FAIR USE,
REVOLTS FROM TRUE BIRTH, STUMBLING ON ABUSE;
VIRTUE ITSELF TURNS VICE, BEING MISAPPLIED."

Romeo and Juliet, II. 4.

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LONDON: SIMPKIN, MARSHALL & CO., STATIONERS' HALL COURT,

1883.

BY THE SAME AUTHOR.

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PREFACE.

The period of nearly two months which has elapsed since the delivery of my "Address on Health," at the Social Science Congress, at Huddersfield, has afforded me the opportunity of reading the criticisms of those who disagree with me, of studying the numerous letters and leading articles on Education in the public press, and of receiving much correspondence on the subject. As a result of all this, I am more than ever convinced that Education in England is drifting away from a high, wholesome, and sound standard. Three cardinal sins are undermining the Educational fabric: **too great hurry**, the attempt to crowd the work of many years into a period of two or three; **too many subjects of study**, 'non multum sed multa'; and **a lowered morale**, which by its appeal to selfishness and competition, tempts our rising generation to look upon knowledge as a means of surpassing one another in a race for gain, and, by the increasing tyranny of innumerable examinations, renders the work of true educationalists more and more disheartening.

Things are growing worse; and, unless public opinion awakes to the fact that examinations, necessary and unavoidable though they be, do harm as well as good, often more harm than good both physically and intellectually, that they

spoil the work and waste the energy of industrious men and original thinkers, sacrificing the industrious in order to whip on the idle and indifferent, that they force the accumulation of information at the expense of training, that they are the bane of the best kind of teaching and of the best kind of teachers, we shall have to say of Education, as was said of old of the decline of morals in the Roman Empire:—

> "Labente deinde paullatim disciplinâ, velut desidentes primo mores sequatur animo; deinde ut magis magisque lapsi sint; tum ire caeperint praecipites: donec ad haec tempora, quibus nec vitia nostra, nec remedia pati possumus, perventum est." *Preface to Livy.*

All honour to those Educationists who, realising in their profession a noble, a sacred calling, raise their voice in protest against the ruling spirit of the age, and who are endeavouring to rescue Education from the threatened reign of selfishness, hurry, and 'cram,' and to reclaim for it the ennobling morale of the motto of one of England's grandest Educationists, William of Wykeham—

"MANNERS MAKYTH MAN."

LEEDS, *Dec. 3rd*, 1883.

ADDRESS ON HEALTH.

IN acceding to the request of the Council of the Social Science Association, and in accepting the honourable position of President of the Health Department at this meeting, I could not but feel that I was undertaking a very serious responsibility, inasmuch as the necessity was thereby laid upon me of making a public address on some question relating to national health.

From such an undertaking I naturally shrank, as it called for an expenditure of much thought and labour, and of time that cannot easily be spared by an active and busy worker in a profession demanding such constant personal attention as that to which I belong.

Selection of the subject of the Address.

Not being professionally engaged in public sanitary work, it was hardly possible for me to take a general survey of matters affecting national health. Finding, however, on inquiry, that I might select as the subject of my address any question bearing upon public health in which I took special interest, and having for a long time past thought and inquired much about the tendency of modern education to influence health and physical growth and development, I could not hold back from using the opportunity thus presented to me of giving utterance to the thoughts which have forced themselves upon me from various points of view, as a medical man watchful over individual and public health, as one engaged in teaching the rising members of my profession, as one recently for nine years an examiner in my university, as a member of the council charged by the State with the supervision of medical education, as a visitor on behalf of that council of the examinations of the medical corporations of the United Kingdom, as one who have myself gone through a prolonged general education as a training for a profession, and lastly, as a parent.

To the selection of this subject for my address two objections may be raised: one, that in treating such a question in the Health Department I must necessarily trespass somewhat upon the ground proper to another department, that of education; the other, that the question 'whether or not modern education is having a deleterious influence upon health' is already a subject selected by the Council for special inquiry and discussion in this department over which I have the honour to preside.

The first difficulty will be met by the fact that the education question will be dealt with professedly in its bearing upon health. The second is less easy to meet. On this point, however, it may be contended that whereas the papers read in the sections have for their aim the drawing out of facts and statistics, and the statement of the opinions of individuals, the tendency of a presidential address may very properly be to bring together various streams of public thought, and the suggestion of lines for future investigation, to indicate tendencies and to suggest inquiries.

Education and Money "Convertible terms."

In contrasting the period of my own education with the present time, two great facts stand out; elementary education has become compulsory, universal, and more minutely State-regulated; higher education has become almost universally and most intetensely competitive. Money granted by the State is the lever which rules the first—'payment by results.' Money, in the shape of university and school prizes and public appointments, distributed after competition, is the lever which rules the second—payment according to marks won in examinations.

Education and money are rapidly becoming 'convertible terms.' Is the nation content with the result? Is the result satisfactory from a physical, intellectual, and a moral point of view?

I.—ELEMENTARY EDUCATION.

Complaints of "Over-pressure."

Let us inquire, in the first place, into Elementary Education.

No one can have read extensively the recent correspondence and articles in the press without seeing that very serious complaints are being made of what is called 'over-pressure in education' in elementary schools. The outcry is strong,

and comes from many quarters of the country and from different classes of persons, from parents who know or believe that their children are suffering in health, from teachers whose health is tried and whose life is made a burden by the pressure put upon them to produce tangible and measurable and paying results of their teaching, from school managers, from members of school boards, from moralists and patriots anxious about the future, and last of all, but not least significantly, from members of the medical profession.

There is no doubt about the fact that there is a very widespread impression that primary education as at present conducted is pressing injuriously, and with a constantly increasing force, upon the health and nervous system of children, and still more seriously upon the health and nervous system of teachers and pupil teachers in primary schools, spending thereby wastefully much of the teaching power in the country.

The defence of the present system, and the denial of the existence of over-pressure.

On the other hand, we are told by persons in authority, whose province it is to defend the system which they are working, and working with the highest motives, with anxious watchfulness, and with enthusiasm for the great national work in which they are bearing a part, that such breakdowns of health occur but seldom, or that they occur only in underfed children, or in children already of feeble constitution, on the verge of illness, and that such disasters to individuals are no more than must be expected in the severe battle of life. We are told by those who have access to scientific analysis of statistics that the death rate of children of school age is diminishing and not increasing, as would be the case were the outcry against 'over-pressure in education' founded on fact. They point to the fact—a most valuable one for the nation—that many children taken from squalid, ill-regulated, ill-ventilated homes, where they formerly wasted an undisciplined, untaught childoood, spend with advantage to their bodily, mental, and moral vigour many hours of each day in wholesome discipline and training in a carefully constructed schoolroom. As evidence of this, Sir Lyon Playfair quotes in a speech in the House of Commons (July 26) the tables published by the Statistical Society. Two periods are compared together—1838 to 1854, and 1876 to 1880. 'In the latter period, among children from five to ten years of age there had been a dimunition of mortality of nearly 35 per

cent., of which but 6 per cent. could be accounted for as the effect of hygiene. And what diseases has come down? All but one. In the ten years before the Education Act brain disease killed one in 2,000; in the ten years after, it killed one in 2,000. There was undoubtedly a large increase in the number of suicides, showing that there was something wrong in our social system, that the struggle for life and the keenness of competition were too severe. It was to be observed also that educated people committed more suicides than the uneducated, and therefore to that extent education had something to do with it.'

In answer to **Lord Stanley of Alderley**, who in the House of Lords (July 16) raised the question of overwork in elementary schools, the Lord President of Council states, 'The result of inquiries made (of the inspectors) showed that while there were here and there cases of overwork on the part of children and pupil-teachers who were anxious to distinguish themselves, upon the whole there was *very little ground* for the wide and highly coloured statements which had appeared in some of the newspapers. Any school might earn a very fair grant by confining itself to the ordinary subjects of instruction, and it was undoubtedly a mistake for the managers of a school to attempt to accomplish more than their staff enabled them to accomplish.'

Mr. Leighton, in the House of Commons (August 9), inquired whether the attention of the Vice-President of the Council had been called to the increased proportion of pauper lunatic children, and asked whether he would cause special inquiry to be made by Her Majesty's inspectors during the ensuing year on the subject of over-pressure in the elementary schools of the country. Mr. Mundella in his reply showed that such increase of pauper juvenile lunatics can be well explained by the increase of population, and by other facts bearing upon an increased recognition by the State of its duty towards lunatic children, the greater proportion of whom were idiots or imbeciles from birth.

I need hardly say that **Mr. Mundella**, in all his public utterances on this subject of over-pressure in elementary schools, gives evidence of his earnest, watchful study of the effect of the new code, and of his sincere anxiety to prevent the overtaxing of children and teachers.

The defence essentially statistical.

I have here endeavoured to state fairly the case for the defence of the present state of primary education with respect to over-pressure, and of the denial of its existence. This defence depends mainly upon statistics, which show first of all that there is no increase in the proportion of lunacy in children of school age, certainly none that can be traced to undue educational pressure; and, in the second place, that there is no increased mortality, measureable by statistics, which can be laid to the charge of education. Nay, more, much of the reduction of mortality during childhood is claimed, and probably with truth, as a result of the Education Acts.

The question not yet ripe for statistical solution.*

But are these questions which can be solved by statistics of death-rate or actual lunacy? How many of the older ones amongst us can remember one instance of a death during school age or school life which could be clearly laid to the charge of over-study? I cannot remember one of my contemporaries. Yet there must be few who have not known of cases of mental and physical breakdown. Were such fatal disasters occurring in numbers to be detected in statistics, what a mighty collapse would be implied of the many who break down and do not die from the immediate effects of study! Yet there is one point even in these statistics which is ominous. Whilst the death rate between the ages of 5 years and 20 has diminished 30 per cent., the death rate from brain disease at those ages has been stationary. Nay, more, Dr. Crichton Brown, quoted by Lord Stanley of Alderley, says, 'It is a curious fact that since the recent spread of education the increase of deaths from hydrocephalus has not been among infants, but among children over 5 years of age.' And what shall we say of those who are carried off by consumption and other wasting diseases, in which over-work has been a leading factor in the failure of health?

Moreover, there is another point which must not be overlooked. The statistics quoted by Sir Lyon Playfair end with 1880. What will be the tale of 1881, 1882, 1883, the years in which it is said that the educational pressure has been increasing under recent changes in the code, and during which more especially the outcry throughout the country has taken shape and made itself heard?

Statistics, in truth, hardly touch as yet the fringe of the question, and at the best give the verdict 'not proven.'

* Appendix, B. Statistics.

The existence of more exacting systems on the Continent no proof of the absence of over-pressure in English schools.

Another point in which there is apparent ground for justification of the Department are the facts stated by Mr. Mundella that 'the school life of English children was the shortest in Europe, and that the requirements of the English educational code were the lightest.' This defence is open to a double reply. First, the fact that on the Continent educational codes prevail of greater severity than the English code is no proof whatever that the English is not injurious in its effects upon the health of teachers and pupils in this country. Second, if it be proved that the foreign codes are more severe than the English, and it can be further proved that they produce no harm to health, then the conclusion is not unreasonable that on the Continent the science by which educational requirements are brought into harmony with growth, development, and health has attained a point of perfection from which the English educational system is separated by a long interval.*

Evidence of a wide-spread belief in over-pressure.

On the other hand, what evidence have we that in this respect of national health something is wrong in the educational machinery?

In the first place, within the last weeks of the session the subject has been three times discussed in Parliament, and the Education Department has been three times placed in an attitude of defence. Such questions would hardly have been raised by our responsible legislators were there not a very strong under-current of dissatisfaction, and a presumption that there were grounds for this dissatisfaction.

In the second place, facts are being collected, one-sided facts perhaps, by persons not themselves engaged in tuition, and are being published in pamphlets which reflect a wide-spread feeling of unrest: notably I may mention the pamphlet by the Rev. R. A. Armstrong,† of Nottingham, on 'Over-pressure in Education;' and a second by Lieut.-Col. J. A. Digby,‡ of Dorchester, on 'Hot-house Education.' The first of these gives a vivid picture, supported by numerous statements, of the strain that is put upon elementary teachers,

* Appendix, A., p. 24. Mr. Heller's Speech.
† James Clark & Co., Fleet St. Price 6d.
‡ Edward Stanford, 55, Charing Cross. Price 1s.

and forcibly shows how the *primum movens* of the whole educational system is a refined mechanical distribution of the Government grant, 'payment by results,' or, in the 'paraphrase' of its first great advocate, 'once place a man's ear within the ring of pounds, shillings, and pence, and his conduct can be counted upon with the greatest nicety.'

The second pamphlet deals rather with higher education.

A third current of public thought finds vent in the daily journals, in leading articles, and in correspondence I rarely take up a journal, medical or otherwise, without finding some contribution to the discussion. In the correspondence a letter now and then in defence of the system appears, but the bulk of the evidence, much of it from experienced and competent persons, is condemnatory of 'results.' Of the articles written in the journals it is rare indeed to find a sentence in palliation of the present system.

Let me in the fourth place speak of a stream of thought which cannot easily be measured, as it does not often present itself through the press, I mean the conviction in the minds of the medical profession, a *consensus of skilled opinion, that the educational machinery of the country is at present moving on wrong lines, on lines tending not unfrequently towards injury of health. There has been no polling of medical opinion on this point, but there has been plain speaking by members of my profession whose opinion on such matters must carry weight. For my own part, for some time past, long before I was aware that I might be called upon to give this address, I had been observing, collecting opinions and observations of others, and, whenever an opportunity presented itself, had been conversing with members of the medical profession on the bearing of education upon health. As a result of this I may declare the almost unanimous opinion of all those with whom I have conversed to be that education, so called or miscalled, at the present day, from the highest to the lowest, is doing injury to the health and nervous system of very many of the rising generation.

Pupil Teachers.

As to elementary education, my own observations have chiefly been made upon female pupil-teachers, who from failure of health, strength, or eyesight, have sought my advice, and on inquiring into the work they have to do, and the series of examinations they have to pass, I was simply

* Appendix, C., p. 31. Concensus of Medical Opinion.

horrified at the refinement of human slavery and torture* that had been invented and was being carried out in this civilized country.

The nation can hardly realize what is the life of these pupil-teachers. Apprenticed to their calling at the age of thirteen or fourteen,† they spend five and a half hours‡ a day in the fatiguing work of drilling little children in their lessons, and in trying to maintain their attention. They then have to spend the rest of a day, commencing at 8 o'clock in the morning, until 8-9-10, and before examinations, even 11 o'clock at night, 'ay and even 12, many a one,' as said a schoolmaster, with scanty time for meals, and almost none for recreation, grinding away at their miserable treadmill, in order, not to improve their minds, not to develop their faculties, but to meet the demands of an inexorable examination. This, bad it may be in the case of boys, is more acutely wrong in the case of girls, coinciding with that critical period of their physical development which intervenes between girlhood and womanhood, when the physique is most sensitive to conditions affecting health and growth, and when the foundation of a healthy or weakly womanhood is laid. Verily the present scheme for female pupil-teachers must have been invented by men, not by women, and certainly without the sanction of the medical profession. I am aware that the enormous and sudden demands resulting from the rapid extension of primary education have rendered the 'pupil-teacher' a necessity; that the evils of the system are now being recognized; and that Mr. Mundella, in his speech on the education estimates, rejoiced in the rapid diminution of pupil-teachers. Yet this is but an extreme instance of what in its degree is going on as to overwork of teachers and over-pressure of the children in many elementary schools. A system which can formulate and tolerate the one is hardly likely to lend a sympathetic ear to the complaints of overwork by the others.

Questioning of the mode of working of the Education Act necessary.

Enough has been advanced surely to convince a reasonable mind that the time has arrived when the nation should review its position in reference to primary education in order to retain and increase, if possible, the mighty advantages it has secured through the Education Act, and to eliminate what has become

* Appendix D, p. 36. † Now changed to Fourteen.
‡ Now reduced to five hours.

or tends to become injurious, and to weaken the educational progress of the country.

It is clear that the working of the Educational Acts, in relation to their effect on the nervous system of children and the younger teachers, has to be inquired into; and it appears to me that some such questions as the following should be widely put by judicious and unprejudiced persons in such manner as to obtain fair and fearless information.

Question I.—Have not our educational schemes been planned too much on the assumption that whatever the intellect can be driven to do, it can accomplish with impunity; and that it is a work of supererogation to inquire how much intellectual food can be digested and appropriated, forgetting that a growing brain and developing frame have to be reckoned with, and will resent attempts to hurry nature's processes?

Question 2.—Are not we ignoring the trite old maxim, *mens sana in corpore sano;* forgetting that unless the *corpus*, *i.e.*, the brain structure itself, be sound, well grown, and well thriven, it is hopeless to look for the *mens sana*, the vigorous, capable, effective intellect, however loaded with information?

Question 3.—Can the nation deem it a matter of slight moment, as a thing unavoidable in a scheme of national education, an 'inseparable accident,' that a few children— and the authorities admit some instances—should suffer in their brains from over-pressure, seeing that their parents have no choice but to send them to school, and often to a particular school, under pain of penalties?

Question 4.—Are not we ignoring the enormous accumulation of forces which through the education grant concentrate their pressure on the elementary scholar? First, there is the public money; then there are the minister and his department, responsible to the nation for the proper employment of the fund; then there are the inspectors of schools, guided and tethered—shall I say hampered, harrassed?—by a most elaborate and often varying scheme of rules. And next comes the teacher, who is compelled, in order to win for the school a due share of the money grant, in order to save his own reputation, and it may be his salary, in order to gratify perhaps his own ambition and win a high percentage, in order to satisfy his managing committee or board, behind whom there are often the ratepayers, with a possible School Board election guided by political motives looming in the distance—the teacher is compelled, I say, so to drive the backward, the dull, the ailing, the badly fed, the badly homed children, by

extra hours of work, by home lessons, by the fear of corporal punishment, as to force above its natural level a low substratum of pupil intellect.

Question 5.—Do we not, by compelling 'each particular' child to earn its grant, 'place,' in the words of a schoolmaster, 'the children's health in direct competition with the schoolmaster's living'?

Question 6.—Do we or do we not for the same reason induce schoolmasters to press a weakly or sickly child to remain at school in order not to lose the grant?

Question 7.—Do we or do we not induce school managers, in the face of the advice of a medical man, nay, even of a health officer, to refuse to close a school just before an examination when contagious disease has declared itself? and, in one instance I know of, to cause a wide spreading of an epidemic of diphtheria?

Question 8.—Do we not compel teachers, pupil-teachers, and pupils to work with perpetual tension and perpetual worry, and so destroy all happiness and brightness in school life? 'Worry,' says a recent writer in a medical journal, 'is fatal to good work; and to worry the growing brain of a child with work is to maim and cripple its organization, doing irreparable, because structural mischief, the effects of which must be lifelong.'

Question 9.—Are we not wastefully wearing out, not only the feebler and less competent, but the older, the competent, the experienced, the most valuable of our elementary teachers?

Question 10.—Are not we in danger of producing for the work of education a class of exhausted, spiritless teachers, for work which will be done with lack of heart and interest, and under the pressure of that hardest of taskmasters, money?

Question 11.—Are we not in danger of prostituting education, which should be constructive, building up, and drawing out of the human faculties, and of rendering it destructive and of little worth?

Question 12.—Are not we making the mistake of attempting to examine into and assay every detail of State-aided education with a doctrinaire minuteness?

Question 13.—Are not we repressing in our teachers all originality and taste in teaching, and rolling them down to a dead level of uniformity?

II.—HIGHER EDUCATION.

Thirty-five Years Ago.

Let us now turn our thoughts to the higher education of the country.

Some thirty-five years ago higher education in England meant a classical and mathematical training brought to the highest perfection, and having its most complete representation in the Universities of Oxford and Cambridge. That education, the result of the wisdom and experience of many generations of the ablest and most cultivated men in the kingdom, had a clear object in view, and as a rule succeeded in attaining that object, which was so to train the intellectual faculties as to prepare men for entering upon their professional studies whether in divinity, law, medicine, or statesmanship, with sharpened wit, a cultivated power of mental concentration, undiminished freshness of mind, and undamaged physique; a preparation and nursing up for the work of life. In those days examinations were few, 'cramming' and 'coaching' were little heard of, breakdown of health and nervous system was exceptional.

Introduction of Natural Science into University Education.

A twofold change, however, was coming over national requirements. The marvellous opening out of the field of natural science compelled the universities, hesitatingly at first, to widen their borders and give the younger science a place beside the elder sisters. In the attempt to combine the old and the new by accretion rather than by amalgamation and consolidation, there resulted for the time a great unsettling of the educational forces and processes, at least in the older university.

Introduction of Competitive Examinations.

The second change has proved more serious, shall I say almost disastrous? to true education. The awakening of the national conscience to the injustice of the system by which appointments in the public services were distributed by private patronage, rendered some method necessary which should be fair to everybody, and should pick out for the service of the nation the most competent by education, ability, and acquirements. What method could be more convenient or more obvious than examination, which as a

rule had hitherto worked well, both in influencing education, and in selecting the fittest in the universities?

But the element of competition, at first apparently a wholesome factor and a useful spur, became shortly a plague spot, which has grown and spread and infected the whole system of higher education in the country.

We have competition for the Indian appointments, for our army, our navy, our civil service. Some colleges in Oxford,—I know not how far Cambridge has gone in this direction—some colleges in Oxford admit as undergraduates none but men who give promise of obtaining high honours; in other words, they reject, refuse to educate well-trained industrious men, disloyal to their obligations as national institutions, in order to gratify corporate selfishness and ambition. Admittance to undergraduateship is, in many colleges, by competition. Public examinations have been doubled at least in number.

Foundation Scholarships and Superannuation in Public Schools.

And what shall we say of the public schools? Here also the 'running has been forced,' and is still being forced by competition. Foundation scholarships and entrance scholarships are distributed to boys little above childhood, after severe competition, which implies hard study and grinding almost from babyhood. Not content with the forcing of the foundation scholars, of recent years school authorities have caused a further tightening of the educational screw to take effect on non-foundation boys by 'superannuation,' a scheme devised at first to enable a head master to get rid of idle boys who lagged behind among the younger at the bottom of the school, and were doing no good to themselves and harm to their class-fellows. Soon, when the idle and most backward boys have been weeded out, the rule takes effect on boys less idle and less dull, until at last even the lower parts of a school become a continual competition in order to escape superannuation. Verily the school motto ought to be 'Extremum rapiat scabies.'

Are we not in the matter of higher education living in a 'fool's paradise'?

'Et propter vitam vivendi perdere causas.'—Juv. viii. 84.

Are we not in the name of Education destroying the very objects she aims at, and missing her τέλος, her goal? Are we not 'sacrificing the tree in our attempt to obtain its early fruit?' Are we not passing through an era of unscientific

education? Education, in the truest, widest, most scientific sense, should aim at the development of the 'whole nature,' the intellectual, the physical, the moral, and the spiritual; and should take cognizance of and be guided by all the various factors in this complicated problem.

Can anyone maintain that she takes cognizance of the physical side? Is she not bound hand and foot to the thraldom of competition from childhood to manhood? Does she not say to a child in the nursery, You must begin your grammar and your Latin, or you will not be ready at eleven years of age to try for a scholarship which shall be your passport to a public school education?—often, in the case of children of the less wealthy clergy and professional men, the only chance of obtaining such a privilege. Such entrance scholarships being open to all, the candidates are many, the prizes are few, the competition is severe, and the poor little brain is driven to work more fitted for boys two or three years older, to do it under the pressure of competitive strain, and with its future success in life apparently depending upon the result. And this may happen at eleven years of age, and even earlier—witness an advertisement from one of our public schools: 'Twelve scholarships, varying in value from 80*l.* to 15*l.* a year, will be competed for—age of candidates from eleven to sixteen;' and a second advertisement from a preparatory school: 'Three entrance scholarships of 30*l.* will be competed for. Boys to be *under* eleven years of age.'

If successful the boy takes a high place in the school, two or three years in advance of the average boys, and continues to rise—unless, indeed, Nature resenting the strain reasserts her authority, and the boy becomes for a time dull and idle, to the disappointment of his teachers, the discredit of himself, and the salvation of his brain. Successful, he rises in the school and wins a scholarship at the university. Here again competition dogs his footsteps. He must read for honours, and must win honours, or his scholarship, perhaps the only means of completing his university education, may be forfeited.

'The college has bought you for 80*l.* a year, and we have entered you for two Plates—Mods. and Finals; you have got to get a first in Mods. next November.' (Lecture to the Ascham Society, by the Rev. Mark Pattison, B.D.)

His university career ended, he then may have to begin the work of life an exhausted man, to study and cram, it may be, for a competitive examination for a public appointment, or to sit down and reckon with the work of preparing for the profession by which he has to gain a living.

Surely this is unscientific education, imposing burthens upon young growing brains without taking thought how much the nervous system ought to bear, pushing them, urging them, tempting them on by prizes and honours, reckless of the result to vigour or intellect. Can all this go on with impunity? Are the disasters attributed to competitive pressure in education imaginary? Certainly not. I am constantly hearing, often from parents and relatives, of most painful collapse of health and vigour at the end of a scholastic career of early promise and brilliant success.

'Fame is the spur that the clear spirit doth raise
(That last infirmity of noble minds),
To scorn delights, and live laborious days;
But the fair guerdon when we hope to find,
And think to burst out into sudden blaze,
Comes the blind fury with the abhorred shears,
And slits the thin-spun life.'—*Milton.*

Warnings of the Indian Civil Service.

Have we not heard a note of warning from India, that the intense competition for its Civil Service appointments, the parent and model of modern competition, is telling its tale and bearing its natural fruit in premature failure of health, exhausted faculties, and shattered nervous system?

Sir Andrew Clark, in his presidential address to the Clinical Society of London (January, 1883) passed a severe medical condemnation on this particular competition. He says: 'Of the young men who win appointments in the Indian Civil Service competition, I have ascertained that more than a tenth become albuminuric.' In other words, some of the great organs of the body become diseased, temporarily perhaps, yet in not a few instances they have received such a shock that the impress of the damage remains, ready to reappear when the wear and tear of life has fully set in and tries the mettle of every organ of the body.

Warnings by Medical Men.

And have we not had warnings from men eminent in psychological medicine, from Dr. Tuke, Dr. Langdon Down, Dr. Crichton Browne? In the 'Book of Health' just issuing from the press, there is an article by Dr. Browne on 'Education and the Nervous System,' one of the most forcible expositions yet written by medical authority of the physiological laws which should guide education, and one of

the strongest arguments yet put forth for the necessity that educators 'should work in harmony with the laws which medical science teaches.' It is a book to be studied by parents, by medical men, and by all who have the welfare of true education at heart. Speaking of precocity and of early brain forcing, he says (p. 342): 'A regard for the future of the race, must, therefore, constrain all medical men to preach emphatically and constantly in the midst of the indiscriminate educational fervour which prevails, the wisdom of caution and the danger of brain forcing. It cannot be too often or too earnestly impressed on parents and teachers that to overwork the immature brain is to enfeeble it, and that the early talent which they seek to evoke is not a thing to be desired.'

Warnings from Germany.

Again, in Germany Dr. Treichler has called the attention of physicians to the great increase of habitual headaches amongst boys and girls which he attributes to the exhaustive effort of excessive and ill-directed brain work in schools.

Warnings from America.

In America, the late Dr. Edward H. Clarke 'collected a large amount of testimony bearing on the effects on health of the higher education of women in America, where it is often pushed with remorseless eagerness as yet but little known in this country. And all the testimony collected by Dr. Clarke is in favour of one conclusion; that severe brain work for girls kept up continuously, is most injurious to health, and that its disastrous consequences are most frequently and ostensibly exhibited in the nervous system.' Professor Loomis, of Yale College, looking at the increasing physical deterioration of American girls, says: 'The cry to our older colleges and time-honoured universities is: Open your doors that the fairer part of creation may enter and join in the mental toil and tournament! God save our American people from such a misfortune!' Have we not here warnings worth the attention of our high schools, our colleges for women in the universities, and our private schools for girls where the ardour for passing examinations compels the pupils to work in play hours, on half-holidays, and even deprives them of their one day of rest?

Warnings by English Writers.

Need I refer to the condemnation of excessive competition by some of our leading thinkers and writers? Kingsley, in

his 'Water Babies,' expresses his views in a parody of a well-known epitaph—

'Instruction sore long time I bore,
And cramming was in vain,
Till heaven did please my woes to ease
By water on the brain'—

a not inapt illustration of the Horatian maxim—

'Ridentem dicere verum
Quid vetat?'—Hor., *Sat.* 1.
May we not use caricature to enforce a truth?

Professor Huxley, in his essay on 'Technical Education,'* says: 'The educational abomination of desolation of the present day is the stimulation of young people to work at high pressure by incessant competititive examinations. . . The vigour and freshness, which should have been stored up for the purpose of the hard struggle for existence in practical life, have been washed out of them by precocious mental debauchery, by book gluttony, and lesson bibbing. . . I have no compassion for sloth, but youth has more need for intellectual rest than age; and the cheerfulness, the tenacity of purpose, the power of work which make many a successful man what he is, must often be placed to the credit, not of his hours of industry, but to that of his hours of idleness in boyhood.'

Mr. Herbert Spencer, in his work, 'Education, Intellectual, Moral, Physical,' pleads warmly for a true balance of the educational forces, and pithily condemns the exaggerations of modern systems. 'For Nature,' he says, 'is a strict accountant, and if you demand of her in one direction more than she is prepared to lay out, she balances the account by making a deduction elsewhere.' Again, he says: Those who, in eagerness to cultivate their pupil's minds, are reckless of their bodies, do not remember that success in the world depends more on energy than on information, and that a policy which, in cramming with information undermines energy, is self-defeating.' Again: 'What folly is it then, while finishing the engine, so to damage the boiler that it will not generate steam!'

Dr. John Brown, in an article on 'Education of the Senses,' in 'Horæ Subsecivæ,' says: 'One of the chief sins of our time is hurry: it is helter-skelter, and devil take the hindmost. Not only are boys and colts made to do the work and running of full-grown men and horses, but they are

* *Fortnightly Review*, Jan. 1st 1878.

hurried out of themselves and their *now*, and pushed into the middle of next week, where nobody wants them, and beyond which they frequently never get.'

Questions about the Modern System of Higher Education.

As I have done in the case of elementary education, may I not also suggest certain questions for consideration about higher education?

Question 1.—Does not the 'epidemic of examinations,' to borrow the words of Dr. Crichton Browne, 'which has overrun the country, threaten to defeat all the objects of those who have been most zealous in advancing education? For it must, if unchecked, blight all true education; while at the same time it cannot fail to make serious inroads on the health of the people. Do we not regard as a panacea, what is really a subtle poison?'

Question 2.—Are we not committing a grievous and pernicious physiological mistake in inducing young boys to enter upon severe competitive examinations, tempting them by scholarships and money prizes to work beyond their strength, and to forget that 'All that glitters is not gold;' selling their birthright of health for a 'mess of pottage?'

Question 3.—Are we not making selfishness and self-advancement the lode-star of early life, teaching 'a boy, even at the age of seven or nine, to work for mercenary purposes at a period when he ought to be trained the other way, in order to enable him to resist those influences to which he will be exposed?' These words are borrowed from the speech on 'Competitive Examinations,' by the Rev. C. L. Blackman, at the Social Science Congress in 1873.

'Thou shalt not covet, but tradition
Approves all forms of competition.'—*Clough.*

In the Great Metropolis.

'Each for himself is still the rule;
We learn it when we go to school—
The devil take the hindmost, O!

And when the schoolboys grow to men,
In life they learn it o'er again—
The devil take the hindmost, O!'—*Clough*

'I remember once to have heard a guardian say to his charge, "Knowledge is money in these days: therefore work hard and get knowledge." I thought there never was so high an end urged for so mean a motive. . . .Surely 'the fine gold is becoming dim,' if there are many among our countrymen who are of this tone. And I am persuaded that many are.' *

Question 4.—Are we not in danger of degrading education from being a noble profession to become an ignoble trade? †Witness the scholarships advertised as baits to attract clever and precocious boys, in the hope that they may win further scholarships and honours, and become an advertisement to their school. Witness again the educational advertisements in the *Times*, where in two out of three the burden of their song is 'preparation for examinations,' not sound education, and in a majority of these the winnings in public examinations are paraded—often with the name of the winner—sometimes even with the number of marks gained—

Question 5.—Are we not ignoring the facts of constant experience, often observed and commented upon, that, in the battle of life, the judgment of the prize list and class list is frequently reversed, and that much of the hard work of the world is done by men who never in scholastic judgment rose above mediocrity, showing that success in life often depends upon something which cannot be gauged by an examiner, and which it is often beyond the power of the schoolmaster to impart?

Question 6.—Are we not forgetting, that, while precocity often proves to be but weakness, backwardness often turns out to be strength, a nervous system prudently, though unconsciously, keeping in the background until the physical power through which it must work has become developed and matured?

Question 7.—Do we remember, that in the great battle of life of the future, the universal and increasing competition into which our rising generation will have to be launched, there will be greater need than ever for trained, but not narrowed and exhausted, intellect, for cultivated senses and a vigorous frame, whether they remain to fight their way in their native country, or venture forth to seek their fortune in a distant land?

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* Sermons at Wellington College, by Archbishop Benson, p. 192.
† Appendix F., p. 43. Boy's Brains a Marketable commodity.

Is any mitigation of the evils of competition possible?

Should the nation become convinced that the present system of competitive examination is a mighty evil, a counterfeit, it will demand and seek for a remedy. It will ask whether it be not possible to retain the advantages and strike out the evils which beset examinations. It will study out more scientifically what the aim and method of an examination should be, and how it may become possible to select from a large number of candidates all those who give evidence of good ability and good training *under whatever system they may have been trained.* Finally, when the grain has been picked out from the chaff, if the number of the grain outnumbers the appointments to be made, how shall the final selection be made? Surely not, as now, by an exhausting race for marks, which fails except by chance to select the most competent, which damages the health of many who succeed, and of probably many more of those who fail, and developes the educational crammer, reintroducing thereby 'purchase under an alias.' May we not find a possible solution of this difficulty of final selection amongst competent candidates, fair to all and damaging to none, in drawing of lots?

Have we not in drawing of lots also a means of distributing entrance scholarships in public schools which will not violate the laws of physiology, nor impose upon young children and young developing boys the fatal temptation to overwork?

'Si quid novisti rectius istis
'Candidus imperti, si non, his utere mecum.'—Hor. Ep. I. vi. 67.

Hard work and overwork not synonymous.

In this attempt to trace out and reflect views on educational matters which are rife and under discussion at the present time, it is not likely that I have been so completely neutral as not to betray my own views on the question.

Indeed, were I not convinced of the existence of educational dangers to health, I should not have selected such a subject for the present address.

Yet let it not be supposed that I am depreciating true education, or advocating idleness, or undervaluing hard work. Industry and hard work I value and sympathise with, both in educational and in active life. Nay, more; it is my belief that hard work and long hours of work do not of themselves constitute over-pressure in education or overwork in life. It

is the work which is done under perpetual worry and anxiety, and under compulsion of want of time, that tries the health of young and old. Work, even hard work, which is done with pleasure and buoyancy, with wisdom and unselfishness, under a strong sense of duty, with a consciousness that its effect will be abiding, surely is not the work that injures health or exhausts the brain. But it is because we are importing into modern education, hurry, worry, and anxiety, selfishness, competition, and feverish desire for success, prize-winning, place-winning, and mark-winning, all tending year by year to grow in intensity and to become more powerful agents, that I see and foresee injury to health, degradation of intellect, and a departure from a true ideal of education. Surely it has become the duty, and will become the function of the medical profession to raise its voice and make itself heard on the sanitary aspect of education as it has made its influence tell in other departments of sanitary science.

APPENDIX A.

Speeches in the combined Meeting of the Education and Health Department of the Social Science Association, at Huddersfield, October 4th, 1883.

Mr. Teale (President of the Health Department) said: Mr. Hamilton had touched rather nearly the medical profession on the subject of certificates. Medical men might at times be tempted to be too lenient towards persons whose welfare depended upon their certificate of good health. But such instances he believed were rare, because it was the constant habit and function of a medical man to act judicially, and this judicial habit of mind had no doubt influenced them largely in giving certificates. Mr. Hamilton expected rather too much from a medical man called upon in a casual way to give a certificate of this kind. When a pupil teacher applies for a certificate of health, the medical man will probably examine him, and finding him in fair health, or at any rate not ill, will grant a certificate accordingly, but will not deem himself called upon to inquire into family antecedents, or to form a general judgment as to the value of the pupil teacher's health prospects. Such certificates are probably not given as a rule from the point of view of Mr. Hamilton or the Education Department, nor would it be fair to expect a medical man under the circumstances to sit down and consider all the points bearing on the broad question whether a person was fit in every respect for the position of a pupil teacher; especially as he would have nothing to guide him in the formation of such an opinion, and he would not feel justified

in refusing a certificate unless in the presence of obvious ill health. The time will come, no doubt, when these pupil teachers will be examined by the Educational authority in each town, through a medical man acting habitually on behalf of and in concert with the School Board, guided by general rules, and gradually accumulating valuable experience.

An enormous machine had recently been set in motion, and they were just beginning to feel the effects of it, and as he should tell them in his address on the following Monday, the great lever of the machine was money—money that was distributed through various channels, in which various forces had the power of regulating that money. There were forces not under the immediate control of the Education Department —ulterior forces, which aggravated the evils throughout the country. There would not be such an enormous amount of complaint unless the shoe pinched in a great number of places. People said that there must be something wrong when there was such an outcry. The question was—Where does the shoe pinch? Probably the Education Department would see their way to make certain modifications in order to prevent the mischief, which he believed happened in this way. He could illustrate it by what took place at the last Leeds election for the School Board. That election was conducted on political lines in order to secure a board of fresh persons. One political party urged strongly that the previous board were too lax, and did not compel their teachers to get a larger percentage of marks. The new Board was elected on the principle of getting their teachers to make a larger percentage of marks by increasing the pressure on the children. What has happened lately? The result of the recent examination was that the grant received by Leeds is smaller than in some other towns. What did they do? Some of the members, he was told, instructed the teachers that they must get results out of the children by pressure. Again, the teachers had a bonus grant for getting certain results. Some members wished it to be given, on what was in his opinion an admirable modification of the code, viz., what was called a merit grant, which was that the inspector should have the power of assigning a fair amount of money, irrespective of marks, if he was convinced that the school was being properly conducted; but some of the members did not want the merit grant to be the basis of the bonus, but the percentage grant. For instance, here is a school in one part of the town with children of the well-to-do artisans, and the teacher can easily raise the percentage to 85 per cent.; and here is another school, that has the children of the poorer people and Irish parents, and the teacher with all his efforts cannot raise the percentage beyond, say 60 per cent. They

would therefore see that the way in which this money might be used brought in a serious force, which might interfere with the intention of the Education Department, and tend to produce injury to the health of the children in the way he had described. A good deal of injury to health was being done throughout the country (including the higher education), and the harm done was through the system of examinations. England was now over-examined. There was a great deal of bad examining. A good examiner required experience, judgment, and tact, and a true conception of the object of the examination. That object should be twofold. First, to regulate study aright, and unless it did that it missed one of its true aims; and, secondly, to find out what the pupils know and the quality of their knowledge. There were numerous examiners whose only object seemed to be to find out what the pupil did not know. Examinations must become much more of a science before it could cease to be said of them—"The evil that they do lives after them, the good is oft interred with their bones."

Mr. Tait (Huddersfield) said that in his capacity as Inspector of the Huddersfield Board Schools, spending his time largely in visiting the schools, he had exceptional opportunities for forming an opinion upon the question as to whether over-pressure existed. His testimony was that it did exist; and though it did not affect the majority of the children, nor even the minority, to the extent of sensibly increasing the mortality, still it was a serious evil. There were three classes of children who suffered from it—the irregular, the dull, and the delicate. He had known many cases of children having to be withdrawn from school on this account as the examination drew near. As education came to be more appreciated, they might hope that the irregular children would cease out of the land; but the dull and the delicate they would always have with them. These had to be worked up to the passing point, or they would reduce the percentage and grant, and injure the teacher's reputation. How was this 'passing point' reached? By working the children at high pressure in school hours, and keeping them in for extra lessons. The immediate object—that of passing the examination—might be gained, but it was at the cost of injuring the health of the delicate, and of making the dull duller than ever, effectually killing any germs of intelligence they might have, and often creating a disgust at the very name of learning. The root of the whole evil was that all children had to be pushed forward at the same rate, no matter how varied their natural ability. When a child reached the age of seven he must be presented to the Inspector, and year after year it must be advanced. The standards for

examination became the standards for teaching. The more rational plan would be to classify the scholars according to their attainments irrespective of the standards; but the teacher knew that if he put backward children into a lower standard than the one in which they would be examined they would know nothing of the work and would fail, and the school suffer in loss of percentage and grant. It was sometimes said that teachers should not attach so much importance to percentages; but it often became a serious thing for a teacher if he fell behind his fellows in percentages and grant. A teacher who passed 95 per cent. was thought a great deal more of than the teacher who passed 90. He did not think the work prescribed in the Code was too much for a child of average ability, and, therefore, he did not advocate a lowering of the standard; the evil was in requiring every child to pass a certain standard. In the New Code there were two provisions that would mitigate the evil—the merit grant which was to be awarded for intelligence, would diminish somewhat the importance that had been attached to percentages; and in the next place, the permission to withhold from examination children who were mentally or physically unfit to be examined. On the other hand, one of the provisions of the New Code would increase the number of children who would be affected by over-pressure, as in future all who had been on the books twenty-two weeks from the end of the school year must be examined, no matter how few times they had attended. The only effectual remedy, in his opinion, was for the Education Department to fix a percentage that might be reached without over-pressure, and to give the full grant for that. There would be then no inducement to strain after high percentages. If some such margin were allowed, the teacher could afford to classify his school on educational principles, and so do away with the over-pressure. With regard to the evils attendant upon examinations, about which previous speakers had spoken so strongly, he had often thought it would be a great gain if the fixed annual examination could be abolished, and the Inspectors were to visit the schools without notice at any time during the school year and test the work of the various classes there and then in what had been done up to the time of his visit. It would do away with the weeks of dreary cram that precede the annual examination, the work would proceed evenly throughout the year, and the Inspector would be able to form a truer estimate of the value of the work that was being carried on in the school than by the present examination, at which the most successful crammer often came off the best.

Mr. T. E. Heller (Secretary of the National Union of Elementary Teachers and a Member of the London School Board) standing between the extreme parties to this debate, had watched this question of over-pressure from the point of view of the school manager and the practical school teacher, and could speak of actual facts. As the accredited representative to the Congress of nearly 14,000 elementary teachers, he had to assert that a serious overstrain did exist, and that that overstrain was not due to the acts or defaults of the teachers themselves. He was thankful to the medical profession for the testimony they now bore to the serious character of the overstrain in elementary schools, but he could not go quite so far as some of their incautious friends both in and out of Parliament, had ventured to go, and he was sure that the teachers themselves desired no exaggerated statements to be made on their behalf. *The evil was too serious to require exaggeration* He believed that the majority of the scholars in elementary schools did not suffer from 'over-pressure,' but a very considerable minority did, and *they not only suffered physically during the time they were subjected to overstrain, but were also, in his opinion, permanently weakened in body and mind.* These cases probably did not to any appreciable degree influence the mortality returns, nor during school life swell the number of lunatics. They would not see the full results of the over-pressure for some years to come, and he regarded as utterly useless and misleading the statistics which had been produced on this subject, and more particularly those quoted by Sir L. Playfair in the House of Commons. Again, there could be no doubt that the nature of the overstrain was such that it ruined the final educational results of the school, and reduced the general average of attainment even among the majority of scholars who showed no physical effects of over-pressure. Overstrain was the more to be regretted because it was so unnecessary, and might be so easily remedied. He advocated a greater amount of confidence in the managers and teachers on the part of the Education Department. If *not more* than 10 per cent. of those liable to examination were allowed to be excused from presentation without further explanation, he believed the larger part of the overstrain would be removed. The present arrangements of the Code required that the strain should be put upon the dull, weakly, and irregular children for at least a year before the judgment of the Inspector could be brought to bear on the liberty of withdrawing them from examination. It would be more reasonable that the standard in which a child should be examined should be fixed by the teacher who is in daily contact with the scholar, and who, being a qualified and

trustworthy expert, would be presumably better capable of settling the educational position of the scholar, than an Inspector who sees him for a few seconds only in the midst of the hurry and excitement of an annual inspection. As to the curious remedy proposed by Dr. Clifford Allbutt—viz., to relieve the pressure caused by examinations, by increasing their number, he was bound to say that he failed to see that it would be effective, and he wondered when the time for teaching purposes would be found, if this homœopathic remedy were adopted. On the contrary, he (Mr. Heller) found serious fault with the London School Board for the way in which it had specialised examinations which kept the schools in an unhealthy and unnatural state of tension, alike injurious to systematic teaching and to the proper assimilation by the pupils of the instruction given. The adoption in 1862 of a system falsely called 'Payment by Results' was at the root of the evil. This specious principle satisfied the commercial instincts of the legislature and of the country; but it had failed educationally, and if examined closely, would be found not what it professed to be. Mr. Mundella had honestly endeavoured to reduce the evil effects of this principle, and had gone as far in the way of minimising its disastrous results as the present state of public opinion would permit. They should, however, speak out, and insist upon a more rational distribution of the Government grant. Whatever in the Code was found to be injurious to the physical or mental improvement of the people should be remorselessly removed, and no political, denominational,or social consideration should divert them from this purpose. The whole evil resulted from the attempt made to satisfy the Code, by driving all scholars at the same rate through the standards, irrespective of their physical condition, mental stature, or the home influences surrounding them. Recently he (Mr. Heller) had been afforded an opportunity of visiting schools, and of consulting with teachers in Belgium, Holland, and Prussia, and he found that in these countries there was no individual examination, and that the head teachers were at perfect liberty to classify their pupils on purely educational considerations. To this liberty he attributed the absence of over-pressure in these Continental schools, and the higher intellectual results which were reported to be obtained in some of them. He, however, was of opinion that the average results of English schools in elementary subjects would bear favourable comparison with those of Continental schools, and that the reports of the theorists who have seen only a few of the show schools in the large Continental towns are most misleading, and do not give a fair comparison of their relative position with English elementary schools. He hoped

some resolution would be adopted by the United Section affirming the existence of over-pressure, and directing an inquiry into the subject.

Appendix B.—Statistics.

The British Medical Journal, in a leading article, p. 731, Oct. 13, 1883, says :—'There are a large number of persons interested in the maintenance and extension of our educational system, and their prepossessions will unconsciously incline them to listen to everything that is to its advantage, and to turn a deaf ear to all complaints that are made against it. They will defend the *status quo* with ingenuity and tenacity, and the assaults of the doctors they will endeavour to fight out on the ground of statistics.

Now, we are willing to admit that statistics must ultimately decide the points at issue; but what we would protest against is any premature or partial appeal to them. A long time must elapse, and much careful observation must be carried out, before statistics of such a character as to be final and convincing on the questions involved can be amassed; and in the meantime we must be wary that spurious and misleading figures are not palmed off on the public, so as to prejudice the case or snatch a verdict in favour of the perpetuation of evils which ought be be recognised, and put a stop to, long before their consequences have assumed such huge dimensions as to stand out prominently in Blue Books. We must not allow ourselves to be lulled into inactivity by the soothing assurances and optimistic dreams of ardent educational reformers, backed by a magnificent array of tables, but must keep constantly in view the fallacies which underlie vital statistics, and the possibilities of honest but interested manipulation. We must set a statistician to catch a statistician, and warn the public to receive with reserve the statistical demonstrations which will be submitted to them, proving that reading, writing, and arithmetic are the tripod on which health rests, and that the most highly educated children are always the soundest in body and mind. It has ever been the rule that medical opinion has been in advance of statistical demonstration.'

Dr. T. S. Clouston in a pamphlet "Female Education, from a Medical Point of View," p. 47,—(Macniven & Wallace, 1882), says 'From a scientific point of view, I am well aware that the weak point of my argument is that it is not founded on any basis of collated statistical facts. I have said to you, "I and many other physicians and physiologists have seen many undoubted instances of girls being hurt by over-education under bad conditions," but we can't say that out of every

hundred girls such a percentage do suffer. We have not the facts to enable us to do so. I hope such facts will be recorded in the future, and may be all the more likely to be observed and recorded through attention being directed to the matter. I am well aware, too, that teachers are not most to blame for any bad results that are to be attributed to the present system of over-educating girls. Parents and the spirit of the time are more culpable than teachers The latter are the public servants, and must do the public's bidding. They are expected to work "The Code" energetically, to earn large grants, to make bricks without much straw in many cases, to turn out omniscient governesses and teachers in a few short sessions. Parents cry out to them about their children, "they are idle," if the whole evening is not taken up with lesson-learning, or if the animal spirits are too high or the holidays too long. I could tell some sad tales of brain break-down in over-worked teachers, male and female, if that were not beyond the scope of this Lecture.'

Appendix C.—Medical Opinion.

On Oct. 13th, 1883, closely following the Social Science Congress, the three leading Medical Journals had articles on Overstrain in Education.

The **British Medical Journal** has a leading article, "Educational Overpressure," quoted above in Appendix B.

The **Lancet**, in an article on "Recreation and Education," says:—"Obviously, there can be no culture, in any true sense of the term, when the educator or brain-cultivator so 'forces' the process of natural evolutionary growth as to hurry what nature has ordained to be done in a leisurely way, and substitutes an intellectual tornado for mental calm.

"The haste to be wise is not less ruinous than the haste to be rich. Indeed, the two ideas are identical. Education is too commonly regarded as a process by which marketable knowledge and skill are to be attained, and the aim of the teacher and of the scholar is one—namely to obtain quick returns. All that is not, on the face of the facts, saleable or utile is cast aside. . . . . Education is the cultivation of powers and capacities, and the educing of such formulated expressions of power as, having within them—inherited—the element of organisation for special purposes, are developed as *faculties*. There is no time to think of these things in the breathless hurry of modern education, and it is small wonder that the elements of mind are overturned, its constitution disorganised, mental health rendered impossible, and the 'diseases' of disorder and derangement set up, under the

baneful influence of a system which is infinitely worse than no system at all."

The **Medical Times and Gazette**, in an article on "Educational Overpressure," says:—"Medical men are, and ever have been, the consistent advocates of education. None know so well as they the hygienic value of training, of knowledge, of intellectual resources, and self-control. But what they desire is education in its larger sense, and not mere schooling. Without under-estimating the utility of the schoolmaster, it must be maintained that the least important part of education is that which is obtained under his auspices. He cultivates a corner of human life, and makes it yield useful produce; but its wide expanse teems with luxuriant and varied growth that he has never evoked, but that he may do much to blight and stunt. . . . .

"The penalties of educational over-pressure of every kind fall much more heavily on the children in urban than in rural districts. . . . . But on children of all classes the rage for precocity, which animates those who have the regulation of educational methods, is telling more or less. The screw is applied too severely, and it has been applied far too fast."

Dr. Clouston, 'Female Education,' p. 18, says, 'There is no time or place of organic repentance provided by nature for the sins of the schoolmaster. Life has to be faced with an imperfect organism, its work and duties done with impaired forces, and its chances of accidents met without a stock of reserve power. This is a poor look-out for the individual; but when motherhood comes, and sound minds in sound bodies have to be transmitted to posterity, how is it to be then with the future race? This aspect of the question of female education during the period of adolescence is of absolutely primary importance to the world. Yet it is wholly ignored in many systems of education. What is the use of culture, if it is all to end with the present generation? What a responsibility to transmit to future generations, weak bodies and over-sensitive brains, liable to all sorts of nervous disease!'

Professor Humphrey, of Cambridge, a member of the General Medical Council, and an Examiner in the Royal College of Surgeons of England, in his address as President of the Congress of the Sanitary Institute of Great Britain in September last, at Glasgow, spoke as follows of education:—

"To pass on to another subject which greatly concerns the well-being of the young, and therefore of the whole community, and which does so more especially at the present time,

when it is being extended to the masses of our population, viz., education. Will this extension advance the sanitary and moral condition of the people, and therefore prove a boon to them, or will it not? This is a serious question; and the answer depends upon the quality and quantity of the education given. Education which strengthens as well as informs the mind, which increases the powers of reasoning as well as provides the material upon which to reason, will, we may be certain, improve the physical as well as give tone to the moral qualities of man. All experience proves this. Knowledge, conjoined with the power to wield it, brings all nature under our sway. It not only reveals to us the best paths to health, and strength of mind and body, but it also enables us to follow them. Sanitarians are therefore necessarily educationists; and their work is to ascertain and point out the kind of education which will be thus improving, to show that all which passes under the name of education does not deserve the name, that much, indeed, which is so called is calculated to produce the very opposite effects to those which are intended, being likely to lower instead of elevate the mental and moral standard. This it assuredly will do if it is conducted or so pressed, as in any degree to weaken or damage the physical status.

"It is for us to point out and strongly impress upon those who are engaged in education, that that education, and that only, is good which stores the mind without injuring the body. We cannot too often, or too forcibly, reiterate the statement that the mental and moral qualities are largely dependent upon the physical, and will rise or fall with it, and especially in these days, when, in the growing struggle for existence, teachers are being ranged against teachers, and pupils against pupils, in competition for certificates, prizes, and places. The temptation to overstrain, and be overstrained, is great; and the ill results upon mind and body are becoming more and more apparent. Every mental effort is attended by brain-wear. The greater and more prolonged the effort the greater the wear; and, unless sufficient time be allowed for repair, exhaustion ensues, and the brain is rendered less capable of renewed effort. Let it be remembered, especially, that this is true of attention. The teacher is apt to think attention is an easy matter, and to punish quickly for inattention, whereas in reality it is almost the whole matter. It is the concentration of the mental batteries under the influence of the will. To effect it well requires a considerable effort of the will, which can be maintained, in children especially, only for a short time —for a few minutes in little children; and the attempt to

enforce it longer, if unfortunately successful, leads to exhaustion of the power to make the effort, in short, creates inattention, and the frequent repetition of the process renders the inattention habitual. The more intense the effort at attention the more true is this. Yet the cultivation of the habit of quick fixed attention, which implies the restraint of wandering thought, constitutes the most essential feature of good education. Upon it briskness of apprehension, memory, and mental power, in great measure depend. Good bodily vigour is necessary for it. When weak, languid, or tired, we cannot apply our minds effectively, that is, we cannot closely attend to anything; and we have the greatest difficulty in doing so with regard to the subjects which interest us least.

"Much has been written, by Chadwick and others, on the evil done by the length of time during which children are kept in schools and expected to bend their minds to subjects which, uninteresting in their nature, are rendered still more so by the manner in which they are taught; and of the truth of the allegation there can be little doubt. It is, on the face of it, absurd, or worse than absurd, that children should be pent up in ill-ventilated rooms for the space of two and a half or three hours at a stretch over dull lessons. Such treatment necessarily prevents the acquisition of the habit of attention, induces idleness, carelessness, apathy, and dullness, enervates both body and mind, and brings large numbers to the condition of having learned one thing only thoroughly, and that is to hate learning. Better results may be expected from an extension of the 'half time system,' and the employment of the hours wrested from books in mechanical preparation for various trades, in military exercises, athletics, and so forth, as well as in acquiring some knowledge of music, of plants, of the habits of animals, and other subjects which will excite interest, command observation, and add pleasure to life.

"Much has also been written, and with a good deal of truth, on the evils resulting from the high pressure system in education, which is deemed requisite to prepare students for Examinations, and to enable them to contend for the many prizes offered for competition at an early period of life. The stimulus of gain and ambition is resorted to to counteract the dislike of learning, to which I have referred, and leads, no doubt, in many instances, to further evils.

"In this age of increasing nervousness, which means susceptibility to impressions or sensibility, the effects of overtension or overstrain of the nervous system, are peculiarly to be dreaded. They are very insidious, often attributed to

laziness, are slow to be recovered from, and are a very frequent cause of breakdown in the student's career. Many, from this cause, fail to reach the examination goal. Many, having reached it, had better never have sought it. Some require long periods of repose to regain the elasticity which heavy pressure has weakened, and to refit them for further work. Some never do regain it, and live on to disappoint the hopes which early distinction had raised. It has been my lot to watch many instances of these results, and I hope, in many cases, to prevent them by strong remonstrances against the seducing but enervating *nocturna lucerna*, and by urgent advice to transfer some hours from work to rest and play, and by instilling the most wholesome maxim, *otiare quo labores*. Happily, the playground and the river come more and more to the fore as the compensations for the schoolroom and the examination-hall; and the ambition of parents are set almost as much upon successes in the former as in the latter. Their instincts tell them, rightly, that it is not by learned feebleness that the race of life has to be won, that the strong, well-knit, and elastic frame is best to be trusted as the home and agent of the sound and effective mind. As I have watched with interest the quickly-growing tendency to increased education of women, and the desire in women to match themselves in the mental arena against men, together with the rise and successful progress of Girton and Newnham Colleges, in connection with my own University, it has not been without apprehension that the associated strain and excitement might act prejudicially upon the sensitive fabric and the finely-strung nerves of the woman. I could not but feel that the consequences to her, and to those who are to come after her, of any deterioration of her physique would be ill-repaid by any results that education could bring; and I certainly think that the less of mental competition she has the better it will be for her. At the same time it is satisfactory to mark that the movement has been attended by a corresponding enlargement of the range and amount of bodily exercise. The gymnasium and the lawn-tennis ground are the antidotes, and therefore the correlatives, to the study; and we may have good hope that the increased and well-balanced exercise of mind and body will lead to a better development and greater strength of both.

Dr. Crichton Brown has written the article on 'Education and the Nervous system' in the 'Book of Health' (Cassells & Co.) to which I have referred in my address.

Appendix D.—Pupil Teachers.

Letter I.

"*August 20th*, 1883.

"My dear Sir,

In compliance with your request, I forward particulars of my duties as a pupil teacher. When I commenced teaching I was 14 years old. I had to serve 1 year as candidate and 4 as pupil teacher; therefore I shall be over 19 when I have finished my apprenticeship. Last January I passed my examination as a pupil teacher in the 1st year, in the following subjects:—Grammar.—Parsing of sentences. Penmanship.—Writing and printing. Composition.—Writing a story from memory, after hearing once. Arithmetic.—Simple and compound proportion. Geography.—Countries of Europe, with maps. History—English dates, from Egbert to Victoria. Music.—Notes on staff, and simple and compound time. Domestic Economy.—Washing and cleaning. Sewing. For this my 2nd year I have to be examined in the following subjects:—Grammar.—Parsing and analysis of sentences, Latin prefixes and affixes. Penmanship.—Writing and printing Composition.—Write an essay on any subject given. Arithmetic.—Decimals and vulgar fractions. Geography.—Countries of Europe and English colonies, with maps. History.—From Conquest to Stuarts. School Management.—To conduct a class in reading, writing, or mental arithmetic. Music.—Major scales and compound time. Domestic Economy.—Ventilation of dwelling. Sewing. School hours.—Morning, from 8 to 12; afternoon, from 1.45 to 4.15. Lessons.—From 5 to between 8 or 9; before examination, from 5 to between 10 and 11.—I remain, &c., ——"

It is to be noted that this pupil teacher has at 15 to bring up *nine different subjects*, and at 16 *ten different subjects* for examination. Apart from any question of difficulty, the mere number is a gross evil, especially for a girl who spends 5 hours a day in teaching, standing most of the time.

Letter II

The following table will shew how a female pupil teacher (under London School Board) is engaged when not at school. Age of girl in question, 16. Pupil teachers are instructed at centres. They also receive instruction from the head mistress of their school in Scripture, and in writing notes of lessons.

Monday—Home lessons	From 7 till 11 or 11.30 p.m.
Tuesday—Centre	From 6 till 8 p.m.
Wednesday—Home lessons ...	From 7 till 11 or 11.30 p.m.
Thursday—Centre	From 6 till 8 p.m.
Friday—Home lessons	From 7 till 11 p.m.
Saturday—Centre	From 9 till 12.30 a.m.

"The lessons at home on Saturday afternoon, and sometimes on Sunday. . . Laura is obliged to work on Sunday almost every week."

The following statement of hours of work is given me by another pupil teacher:—

8 a.m. to 12	...	...	Learning and teaching.
12 to 2	...	...	Dinner and play.
2 to 4.30	...	...	Teaching.
6 to 9	...	...	Study.

I have received the following from a medical officer of a training college.

Letter III.

"1*st October*, 1883.

"Dear Mr. Teale,

Mrs. G—— has asked me to repeat to you some remarks I made in reference to the effects of the amount of work the students of our Training College have to do in preparing for their several examinations. The work is so severe, that unless extreme care is taken by the medical officer to exclude all who are not thoroughly strong and in good health, and all who are found to suffer from what are called 'sick headaches,' we have many break down when preparing for the final examinations; and others needing the 'bromides' to keep them up. Yet at our college the greatest attention and consideration is shewn the students by the lady superintendent. Since I have been medical officer I have found it more and more necessary to weed out all doubtful candidates, and yet have not been able to avert the consequences alluded to above. If a student is really strong and in good health, and has worked up steadily during her pupilage (not crammed for her examination), there is no doubt but that she may compass the work, but not otherwise.—I am, dear Mr. Teale, yours faithfully, ——"

Dr. Clouston says: 'There is another class of young women who have even a harder lot in many cases, and these are the pupil-teachers in the Board Schools. Their work is, in some cases, simply continuous all day, and part of it is irksome, uninteresting drudgery; their homes are often far from being cheerful, and their food far from being very abundant. I know as a fact that the lives of some of our female pupil-teachers are such that as melancholy a "Song of the School" could be sung of them as Hood's "Song of the Shirt."

'In both these cases—the scholars in the higher class of girls' schools and the female pupil-teachers—the range of subjects to be learned at the same time is often enormous.'

'Six, seven, eight, nine, and even ten different subjects, all being learned at once is no uncommon thing! I am glad to say that this is being corrected in the best schools, and only

four or five subjects are allowed to be taught at the same time. This is surely enough.'

Mr. Mundella, in his speech on the Education Estimates (July 26), said: 'On the other hand, he was glad to say that the number of pupil-teachers, which had been 33,639 in 1881, had been reduced to 28,285 in 1882. That decrease was, no doubt, attributable to the working of the New Code.'

Mr. Hepburn Hume, in his Paper in the Education and Health Department of the Social Science Congress at Huddersfield, speaking of pupil teachers, said:—'With regard to the effects of the system upon the health of the pupil teachers, my observations do not lead me to conclusions that are entirely satisfactory; and I regard this subject as the only weak point in my case, although even on this question the statements made are coloured with the wildest exaggerations. I believe that the pupil teachers are over-pressed with work, and I think there are signs that training-college life has been somewhat hard, for there is reason to fear that the nominal hours of study are in some cases rather too long, and no doubt that the actual period of mental labour by the students is, in many cases, excessive. . . . . After quoting Mr. Harrison, H. M. Inspector, Liverpool, on the work and number of hours girl pupil teachers are kept standing, he said this statement that the pupil teachers suffer from over physical exertion, and not from over-study, appears to receive confirmation from the fact that, notwithstanding the increased severity of study at the colleges, the lengthy hours of work, the want in some colleges of proper opportunities for playing healthy games, the need generally of more recreation, and the somewhat gloomy discipline, it is not an uncommon thing to find that the health of the students has improved during their training. . . . . But without wishing to intolerantly reject any remedy but my own, I must express my doubts whether these steps will attain the desired end, which, I believe, can only be reached by the effacement of half the present number of examinations. The annual examination is not too much for children or teachers, because they have but one business, but the pupil teachers have a dual labour to perform in working with the classes they have to teach, and in carrying on their own education. I do not think it necessary to reduce the requirements, for well-regulated work cannot do mischief; it is the ill-regulated work at a white heat for frequent examinations that causes pressure. There should be an examination for admission, one at the end of the second year, and one at the close of the engagement; the last should qualify for admission to a training college, and the student, or ex-pupil

teacher, should be ineligible for any examination for at least two years.

Dr. Clifford Allbutt, on the same occasion said: 'Thirdly, the pupil-teacher is a mischief to himself. The sufferers I see are not the scholars, but these pupil-teachers. Herein I have had much sad experience.

'At the age of consummation of the bodily frame and functions, an age of peculiar susceptibility both of mind and body, these striplings are exposed in their immaturity to the weary strain of day-long teaching and of night-long learning. Their seething brains do not rest even in sleep. Youths bear this better than girls; the phenomenal damage to many impulsive girls and the more latent but broader mischief spreading through these as they develop into young women is incalculable.'

Mr. Markheim, one of Her Majesty's inspectors of schools, in his general report for 1882, says: 'The weakest point in our educational system seems to me the pupil teacher. The long hours in school exhaust many a bright and studious boy or girl; if he throws vigour into his teaching his own studies suffer, if he devotes himself to study he has little energy left for managing unruly children. In either case the system fails, a great many minds are dulled, a great many constitutions are injured to no purpose. Discipline suffers as soon as a class is committed to the charge of a young teacher, parents have no confidence in his ability, and support rebellious children against him. Boy and girl teachers may succeed in other countries . . . but I do not know how we can fail to perceive that adult teaching, and adult teaching only, can satisfy the requirements of compulsory education in this country.'

The School Board Chronicle in a leading article on 'Education at the Social Science Congress' says: 'As a matter of fact the children in our public elementary schools are not being overdone with education. On the other hand there is perhaps some truth in the allegation that we are a little overdone with examinations . . . Of much greater seriousness is the case as to the overpressure on pupil teachers. Here we think, and here alone, is there room for serious misgivings. Some of the speakers spoke very strongly on this subject, and not without evidence. Cases of breakdown among pupil teachers are undoubtedly numerous, and we think the time is not far distant when the whole pupil teacher question will have to be reconsidered."

At the School Board Clerks' Conference, at Swansea, in May, Mr. Davis, of Birmingham, in a paper on 'over-pressure in Board Schools,' said: 'Beginning with the teachers, I must say that nearly all of them suffer more or less from the amount of anxiety and worry which they have continually to bear, and that those amongst them which have the most excitable nervous systems to cerebral weakness suffer very much. One of our head masters has recently died from brain disease . . . We have also one or two other head masters comparatively weak in health, their nervous systems evidently suffering from constant worry about their schools. We have also just now had to send away for several weeks three of our head mistresses, and from the same cause; while a number of our assistant teachers and pupil teachers may always be found upon the sick list.

Appendix E.—Competitive Examinations.

Transactions of Social Science Assn., Norwich, 1873, *p.* 348.

A Debate on the pressure of Competitive Examinations.

First Paper, by Mr. T. M. G. Meiklejohn, contained some strong deprecative remarks on the system of 'cramming' which was adopted in competitive examinations.

Second Paper, by Mr. C. H. Lake, was a condemnation of the system of cramming, and called for a reform of our educational system altogether. 'He considers that the extent to which it is employed may be taken as a measure of the inefficiency of the theory of education. In conclusion, he said, What is our object? That is the great question which underlies this one of competition. Do we assume that the end of education is, not to train and develop all, but to get a a pick? By all means, let us continue our system of development by artificial selection, but let us get the right pick. But if education seems something more than this—something from all for all, something better than success in life, something higher than success in this life, something nobler than the defeat of our neighbour—if it is to include a wrestling with ourselves and with nature, a knowledge of her constitution and forces and action, an insight into the destiny of man, and his relation to the inferior animals and to God; if it is to mean greater prosperity with less destitution, and better economy of time and force and gifts; if it is to imply care for one talent as well as ten, a striving after the highest development of the greatest number,—then let us reform our educational system altogether.'

In the discussion which followed, **Mr. Joseph Pain** said 'that just in proportion as you stimulated competitive examinations, you were really working against education itself. The two sorts of students at colleges were those who endeavoured to master the subjects, and those who endeavoured to master the examinations,—two different things. Many a man, if he honestly and studiously gave himself to the mastery of the subjects, would decidedly lose his place in the examination. Just in proportion as you made competitive examinations the object of attention and pursuit, so you interferred with what might be properly considered the training of the mind, or education. He believed that it could be easily shewn that anything put in the place of that training, and essentially different from it, must of necessity interfere with it. Hence we had the practice,—what was really done by competitive examinations—of continually pulling up the plants to see the condition of the roots, the consequence of which was that all good natural growth was stopped.'

Mr. Rowland Hamilton said 'there were two very broad objections to the present implicit and superstitious reliance upon the competitive examination system for public appointments—one was that we got all men, more or less, with one bias and form of education; and the other was that in making examinations, the results of scholastic training, the exclusive tests, you excluded a class of mind which developed late in life, and formed one most valuable element which could not be excluded without loss to the whole. The practical exclusion of the latter was a great evil.'

Rev. E. L. Blackman said 'a boy was injured also intellectually by the competitive system.'

Miss Sheriff 'regarded the competitive examination system as a disastrous one in every respect, whether socially, intellectually, or politically. . . One could hardly speak too strongly of putting the petty idea of gain into the minds of young men. That was a low motive.'

The **Rev. Mark Pattison, B.D.** (Rector of Lincoln College, Oxford), said 'he had seen excellent results in the way of a continually increasing amount of studious application which had been entirely traceable to the examination system, but exactly along with the advantages had been developed other consequences of a different character; and these consequences had now grown to such a height, that it was quite time that some stop should be put to them; for, as had already been remarked, the examination system was destroying education.'

At the Social Science Meeting at Liverpool, 1876,

The Rev. Mark Pattison, in his presidential address on Education, says (p. 66), "Oxford is a very busy place. No one has any time. 'Life in Oxford is like life in a house which always has the workmen about it.' We are in the perpetual bustle of preparing for examination." Again he says, "Instead of promoting science and learning, they (*i.e.*, fellowships) serve only to make the University an arena in which young men contend for money-prizes, and those who should be teachers are engrossed in training, handicapping, and settling the conditions of the race." Again, "It is inevitable that they (the professors) must prepare their pupils for examination. Every true teacher knows too well that this process is incompatible with genuine instruction in letters and science."

Mr. Walter Wren, in an able letter addressed to *The Times*, of October 13th, after quoting several sentences from my address condemnatory of the present excess of competition, says: 'This is all right enough and might have been made stronger. . . . The remedy is plain enough. Raise the age. The more you cut down the limit of age, the more cramming, brain-forcing, pressure, etc., and the more ruined health and shattered systems will you have. Not long ago I heard a distinguished M.P., who ought to have known better, say "the standard should be lowered." You cannot lower the standard. So long as there is any competition, the boys will keep the standard up. Lower the age to 12, and examine them on the Lord's Prayer, and nothing else, and there is room for good teaching, as well as for cramming and brain-forcing. The cutting down of the age has done the mischief, and will do more. The more you cut down the age the more severe will be the competition and the worse the breakdowns. We have reached the climax of folly. Boys under 14 who compete for Public School Scholarships are examined in nine or ten subjects—viz., in English,—in (1) religious knowledge, (2) geography, (3) English history, (4) dictation; in languages —in (5) Latin, (6) Greek, (7) French, grammar and translations, and also in (8) Latin prose and (9) Latin verse composition; in mathematics—in (10) arithmetic, (11) algebra, (12) euclid; and lastly, handwriting.

'There is room for plenty of breakdowns here. "Religious knowledge" is a middling wide field. You cannot put a quart of beer into a pint pot. Yon cannot put five years' work into three. Still less can you put fifteen years' work into nine. You cannot make babies do boys' work. And you cannot make boys with immature brains do young men's work

without injuring those brains, and, mark, the brains always give way before the physical health suffers. If you put too many irons into the fire of a boy's mind, and keep on blowing that fire to see whether you can keep all those irons hot, you will very soon burn that fire right away to dust and ashes. This has been done in many cases. The longer you keep the age down, the more there will be.'

Mr. Justice Fry:—"Coming next to the examination rooms, he was of opinion that there were a great deal too many competitive examinations Knowledge was divine but cram was a demon." *Address at the Salt Schools, Shipley.*

Appendix F.—Boys' brains a marketable commodity.

Rev. Mark Pattison, B.D., says: 'To avert this danger of the falling off of our pupils, from the drying up of the springs of knowledge, we have had recourse to the famous expedient of prizes. Unable now to guide the student in the path of science, we have instituted competitive exercises—opened a vast arena, in which the youth of the country may race against each other for crowns, some of olive, some of gold. A youth of any ability now comes to Oxford for the sake of our honours and our prizes. He is early put in training for this end. A clever boy can begin to earn a living by prize-getting at fifteen or sixteen, in the shape of a school scholarship. *To excel in examinations is a profitable art.* Professors of this art abound in every part of the country; even masters of the Great Schools are compelled to meet this demand. Parents expect the masters to watch for scholarships in the Universities, and to dispose of their sons in the market to the best advantage. "I will not take less than £100 a year for that boy," writes a master, "but I have another, a good useful lad, whom you can have for £70." What the parents and the master want for the boy, and therefore what the boy wants for himself, is the cash. That the matter in which the competition has to be stood out is literature, or mathematics, or science, or history, is in his eyes an immaterial circumstance. "I was studying law," said to me a youth who had just gained a scholarship, "but I am quite ready to read classics, if that is the condition of tenure of my scholarship." Occasionally a young man comes up to me uncorrupted, not having passed through the hands of the professional trainer; comes up full of ardour for self-improvement, and expecting, in his innocence, to meet with a like ardour in the so-called seats of learning. Such a one I had with me lately, full of enthusiasm, proposing to learn

Sanscrit, and to read some of the best books in English literature. It became my melancholy duty to do what I could to damp his ardour, and I had to say to him, "My young friend, if you have come here with the hope of devoting three years to the improvement of your mind, the sooner you lay aside such an idea the better; the College has bought you for £80 a year, and we have entered you for two Plates—Mods. and Finals; you have got to get a First in Mods. next November, and it will take you every minute of your time to practice your exercises in preparation for that." *The whole time* of the student is a preparation for the examination schools; and this preparation is not a free study of any branch of knowledge, but a drilling of the notes of his tutor into the form in which he will be called upon to reproduce them in the candidate's room. The examination is the measure of all things, and bounds the mental horizon of tutor and pupil alike.'—*Askham Lecture.*

The following fact was told to me by a medical friend who had just read my address on "Health."

'My son, at a small country grammar school, by request of the master, was allowed to go in for the Cambridge Junior local examination. He came out in the first class in mathematics. In a few weeks the master of a neighbouring school wrote and invited him to submit himself for examination for a scholarship worth £30, which he won.' Thus the school 'bought' the boy. This said school puts the following advertisement in a local paper:—'Boys from this school hold open scholarships at Balliol, Brasenose, Exeter, Magdalen, New, University (2), and Wadham Colleges, Oxford; and at Emmanuel College, Cambridge; also exhibitions at Trinity, Cambridge, and at New and Queen's (4), Oxford.'

"The Times" (March 20th, 1883), speaking of the offer by some of the public schools of scholarships to be competed for by junior candidates at the local examinations says: 'It is plain then that the public schools, in offering to take the best local candidates at reduced terms are not offering premiums to their own junior boys, but are proposing to buy the best boys from the smaller or secondary schools. The objectionable element in the scheme is the element of competition. It is as if the clever boys were being put up to auction, to be bid for by the large schools, and to fall to the one which offered the best terms.'

Appendix G.

"Non Multum sed Multa."

Mr. Morrison, High Sheriff of Yorkshire, writes to me—"Our motto now is "Non Multum sed Multa." Take for example the curriculum of a grammar school, of which I am a Governor, which runs as follows:—

"The subjects of Secular Instruction shall be—the English, Latin, German, and French languages and literature.

Such other European languages as the governors may from time think expedient.

Arithmetic and Mathematics.

Geography, Physical and Political.

History, Ancient and Modern.

Political Economy.

At least two branches of Natural Science.

Some branch or branches of Moral Science.

Drawing.

Vocal Music."

To this appalling list of subjects must be added Religious Instruction, and Greek, which latter language must necessarily form part of the course of Instruction in any "First Grade" School.

All grammar Schools reconstructed by the endowed school commissioners, or their successors the charity commissioners, have fastened on them a similar curriculum. The fault lies, of course, with the middle class school commission, who, in recommending the course of instruction to be pursued in our grammar schools, had not the courage to say NO, when any subject of instruction was pressed by an influential witness on the ground that it was a disgrace to an English gentleman that he should be ignorant of it. Some of these subjects are unsuited to the capacity of average boys, and it is obvious to any one who considers how many hours in the week are available for school work, either that the masters must content themselves with giving their pupils a worthless smattering of knowledge of some of the subjects prescribed, or show their superior wisdom, as compared with the commissioners, by quietly ignoring them.

Mr. T. E. Page says (*Times*, *Oct.* 15):—"Between the age of 14 and 19 it is possible to really educate a boy in two or three subjects, or it is possible to fill him with a mechanical or parrot-like knowledge of eight or ten. The one system proceeds on the theory that a boy's head contains a brain, of which the capacities require judicious nurture and development, so that they may be rendered fit for performing really useful work in their maturity. The other system treats a

boy's head as a sort of empty tenement in which knowledge can be warehoused, and, if only duly labelled and docketed, reproduced for sale or use whenever a competitive examination or other circumstance presents a profitable market or employment for it."—*Letter to Times, Oct. 15th*, 1883.

Appendix H.—The rubbish that is taught and examined in.

"Ignotum per ignotius."

Grammar.

Miss Becker, at the last meeting of the British Association, speaking for Elementary Education, said something to this effect:—'It will be necessary to sweep away much nonsense from the subjects of elementary education; Grammar, for instance.'

A Clerical friend said to me one day: 'Other girls (in state-aided schools) are puzzling about "extension of the predicate," whilst ours (a school independent of Government grant) are cutting out shirts.'

I have before me the exercise book of a boy of 13, son of a working man, with sentences dissected into 'subject, predicate, object, and extension'; and a sentence parsed, of nineteen words, each of which had a designation as follows. 'Noun, multitude; common noun; auxiliary verb; active intransitive verb; adverb of time; preposition; distinguishing adjective; common noun; 3rd person plural; active intransitive verb; preposition; distinguishing adjective; adjective qualifying the noun; common noun, preposition; common noun; adverb; distinguishing adjective; common noun.'

Specific Subjects.

A School Board Head Master writes:—'The following are questions given at my school to boys and girls from 10 to 13 years old, in the specific subjects of Physiology, Domestic Economy, Physical Geography.'

Of these questions, I select specimens.

Physiology.

'How do capillaries differ from arteries and veins?

What is the aorta, and what are its uses?

Name the principal bone in the arm.

Explain femur, fibula, clavicle.

Show that the human body is especially adapted to the upright position.

What organs make up the alimentary canal?

Describe the human skull.

Describe the structure of bone.

What is the difference between arterial and venous blood?

By what means is the latter converted into the former?

What are the trachea, epiglottis, bronchi, aorta?

What is the saliva? Where is it made? What are its uses?

What are the most delicate parts of touch? Prove this.

What changes would a piece of bread undergo (*a*) in the mouth, (*b*) in the stomach?

Write what you know about the pancreas, liver, and right lung.

Can you tell me which veins contain pure blood and which arteries impure?

What muscles are used in raising your hand to your mouth?

Write what you know about the left lung, as to (*a*) shape and position, (*b*) work, (*c*) connections.

Show how the structure of the heart corresponds with what it has to do.

Describe the middle or inner part of the ear.

Describe the sympathetic nerve system. What is its work?

Describe the pivot joint and hinge joint. Give examples.

What is the name of the last juice which helps to digest the food?

Describe cornea, iris, retina, and optic nerve.

Describe the bones of the legs and hands.

Describe the largest organ in the head, the smallest in the thorax, and the largest in the abdomen.

What kind of muscles are the following composed of? Biceps, stomach, heart, calf of leg.

Domestic Economy.

Tell me of a nice cheap supper that you would cook for your father when he came home, and how you would cook it.

How would you take (1) inkstains and (2) fruit stains out of a tablecloth?

What is the most economical kind of grate?

What are legumen, casein, fibrin, and gluten?

What causes render water unwholesome for drinking?

Mention any method of purifying water.

What is the most economical way of warming a room?

How would you prevent the rain from rising from the soil into a house?

If you found the rain beating through the walls of a house, how would you stop it?

How many cubic feet should there be allowed to each person in a bedroom?

How do you find out how many cubic feet there are in a room?

Excessive eating and drinking often causes illness! What does this mean, and how is it true?

Why is smallpox an infectious disease? How do you disinfect a sick room?

How would you restore a person to life who has been rescued from drowning?

Why are intoxicating drinks bad for young persons?

Describe the processes our food undergoes in digestion?

Why do we need to drink?

What kinds of food go to make fat, flesh and bone? Why do we eat vegetables?

Physical Geography.

What states of the atmosphere produce hail, snow, and lightning?

Describe shape and formation of a snow flake.

Explain evaporation and condensation.

Explain, with examples in Yorkshire, the terms 'estuary,' 'river basin,' 'plateau,' and 'confluence.'

How are springs formed?

Why are cliffs of the sea often higher than the beach?

What discoveries have been made in sounding between England and America as to the depth of the sea?

Give in order the names of the planets in our system. Say which have moons.

Give roughly the distance between the earth and the moon.'

Appendix H.—Examinations tend to deprave rather than to elevate education.

'Parent loq. "Men will not work except for bread, and boys will not work but for prizes. A general system must be founded on average and not on exceptional motives And after all, what does it matter what motive takes a boy to college, provided he goes; he gets the education all the same." That is just it! He *does not* get the education. If he did, we should say nothing about the motive. The burden of our complaint is, that a system of winning the prizes without getting the education has been invented; a system which simulates education, and is not it, as Mappin's plate is not silver, but looks a great deal better. In this system the aim of the teacher is, not that the pupil should learn, but that he should be able to perform the exercises set for the competition.' —*Rev. Mark Pattison, Ascham Lecture.*

A very intelligent and experienced schoolmaster said to me: 'Examiners can never examine the best work of a school.'