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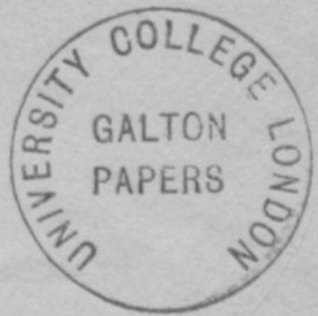
Dear Prof. Pearson,

The process of clearing up here, preparatory to leaving next month, has revealed the enclosed papers, which I put away in 1914 & have not seen since, until yesterday.

These were the collection of duplicates and discarded cuttings from the making up of the 'Red' Books, which I believe you have. It was a last piece of tidying I had not time to finish at Rutland Gate. I intended to save your time if possible, by making a clear index of the cuttings, and I am sorry that I am unable to carry out those good intentions for part of the index remains in a very rough condition. But such as it is, I hope it will make your scrutiny less laborious than it might have been if you had received the cuttings as I found them.

Yours always sincerely
E. Augusta Jones.

f.2



Prof. Pearson
The Galton Laboratory
University College.

GALTON/2/13/1/2

f.1r

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(P. 216)

Sir Francis Galton

Prep cuttings

Decipherment of blurred
p/pts

| Subject | Paper | Date | |
|---|--------------------|-------------|--------------------------|
| Eugenics: Parental Responsibility | Hospital | 1909 Oct. 2 | |
| Eugenics & the Race | Yorkshire Post | 1909 Dec 20 | Sir John Cockburn |
| " " Literature | W. Gazette | 1909 Dec 18 | " B. A. C. " |
| Eugenics | B'ham D. Mail | 1910 Jan | C. W. Wilson (lecture) |
| Breeding Undesirables | Worcester Times | 1910 - | do do |
| Eugenics | Continent Journal | 1910 Feb. | (Sanitary Record) |
| A Positivist on Heredity | M. G. | 1910 June | S. H. Swinney |
| Heredity & Eugenics | Morning Advertiser | 1910 May | Prof. A. Caldecott |
| The Gallon Laboratory | Standard | 1910 May | |
| Are Oldest Sons Inferior | Leeds Mercury | 1910 " | F. J. F. T. T. T. Letter |
| Do great men have great sons | " & Yorkshire " | 1910 April | by John Gray F.R.I. |
| Eugenics | Standard | 1910 Jan | K. P. interview |
| Sanitary Congress | W. Gazette | 1908 June | Address by F. J. |
| Preservation of Disease | M. Post | " | Sir John Cockburn |
| Allusion to Primogeniture Letter (F. J. F.) | Queen's World | 1910 | |
| " Inheritance " (F. J. F.) | Xmas Life | 1910 | Ray Lankester point |

The Hospital

A JOURNAL OF

The Medical Sciences and Hospital Administration.

NEW SERIES. No. 136, VOL. VI. [No. 1208, VOL. XLVII.]

SATURDAY, OCTOBER 2, 1909.

EUGENICS AND PARENTAL RESPONSIBILITY.

ACCORDING to some reformers of the day, heredity, as far as regards the welfare of individuals, matters little, but environment is everything. They say, and with apparent justice which is dangerously misleading, that for a child to be born unhealthy is a relative rarity. Ergo, the prevalent excess of illness and defectiveness, whether physical, moral, or mental, must be attributed to environment, and the road to betterment is the road of social reform. This attitude has achieved so pronounced a vogue that one might be led to suppose that it was based upon incontrovertible premises. Nevertheless, this is, unfortunately, not the case. In an impressive pamphlet issuing from the Galton Laboratory for National Eugenics, Ethel M. Elderton has attempted a correlation between the physical characteristics of children, and various environmental factors in their homes. We cannot do better than quote the concluding paragraph, in which the bearing of the research is summarised. "Practically all social legislation has been based on the assumption that better environment meant race progress, whereas the link between the two is probably that a genuine race-progress will result in a better environment. The views of philanthropists, and of those who insist that the race can be substantially bettered by changed environment, appeal to our sympathies, but these reformers have yet to prove their creed. So far as our investigations have gone they show that improvement in social conditions will not compensate for a bad hereditary influence; the problem of physical and mental degeneration cannot be solved by preventing mothers from working, by closing public-houses, or by erecting model dwellings. The only way to keep a nation strong, mentally and physically, is to see that each new generation is derived chiefly from the fitter members of the generation before."

These are pregnant sentences, and, even apart from the statistical backing they have received, would appeal to thoughtful persons. It is quite easy to trace to its source the commonly-received fallacy that environment is the paramount factor in moulding a life. This fallacy is the legitimate child of the innate sense of justice which leads men to say, "All men are equal," though the inherent inequali-

ties of mankind force themselves into view at every turn. Such things are said because the speakers revolt at the injustice implied by any other assumption. Being determined not to accept as inevitable the hardships dealt out by the unequal hand of Nature, they have managed to make themselves incapable of seeing things as they are, and by constant ingemination of their catch-word have not only themselves come to believe it true, but have even obtained for it a kind of traditional sanctity and acceptance which it by no means deserves. The truth is that the upholding of heredity as the predominant element in the construction of a life involves a degree of parental responsibility which parents are, not unnaturally, extremely loth to admit. It is far pleasanter for a man whose child is, let us say, tuberculous, or imbecile, or morally insane, to be able to say, "This was due to a chill, or to a fall in childhood, or to a careless nurse," as the case may be, than to have to arraign his conscience and admit that he ought never to have married, having himself been tuberculous or insane at some time; or, perhaps, that he ought not to have married a wife tainted with such hereditary disabilities. But, of course, acceptance of parental responsibility in its best and completest sense, which includes the responsibility of potential parentage, means the exercise of great self-control to avoid a risk which is remote, and may never be materialised. It is no wonder then that most people prefer not to admit the risk, if possible, or take it if they cannot remain blind to its existence.

Those who believe, as we do, that the conclusions of this pamphlet are just and true, that by comparison with the endowment which is directly transmitted from parents to offspring, all other considerations vanish into insignificance, may well view the future of the race with some apprehension. Everywhere we see a shrinking prolificity among those classes in which there exists some sense of the responsibility of potential parentage, while the uncontrolled instincts of the lower types among us supply a continuous accretion of individuals similarly unendowed. It is hard not to give way to pessimistic forebodings when one contemplates the logical sequel to a continuance of this process. No stock possesses so much intrinsic merit that it can permit

itself indefinitely to be propagated from its least efficient elements; at least with impunity. And it is unhappily true in the present day that the less a man appreciates the responsibilities of parentage the larger is his family. It is often held up as a rebuke to the "better classes" that they marry late, and that their families are small; but to a dispassionate observer it seems no grievous sin to hesitate about bringing into the world children foredoomed, by reason of hasty and ill-considered marriages, to defective health, or children in such numbers that adequate provision cannot be made for them. If we are really concerned for the mental and physical welfare of future generations it is time we were done with beguiling ourselves that the ban of heredity can be removed by judicious environment. Nothing is more certain than that such removal is impossible,

though palliation of the mischief may be achieved. The rights of the unborn do not trouble us much, but if there be one thing more than another which might be held the prescriptive right of every human being, especially in this much-vaunted civilisation of ours, it is the right of beginning life sound in body and mind. We are beginning to evince a sensible, though late, solicitude for the children that are. What is required now is an awakening of interest for the children that are to be. Let us put aside this childish disregard of the hard facts of heredity, and teach our people how true it is that figs do not grow on thistles, and that fathers and mothers are to a large extent re-incarnated in their children. If we are to maintain our greatness this truth must be hammered home, that an Englishman can commit no greater crime than to bring into the world an hereditarily enfeebled child.

SUFFRAGETTES AND THE STOMACH TUBE.

WE have no doubt that the action of the prison authorities in forcibly feeding certain refractory women prisoners during the past week—an action which has evoked animated questioning in Parliament and very unwise declamation out of it—will win many friends for the cause which these victims of "official brutality" allege to represent. To us, who stand in a measure outside the pale of suffragette or anti-suffragette criticism—since we have never consciously expressed any opinion on the merits of the movement as a whole—the present aspect of the case seems very simple. Mr. Mansell Moullin, in a letter to the daily press, has pointed out very clearly that the "hospital methods" which have been used in the case of these refractory prisoners are not hospital methods at all in the strict sense of the word.

Forced feeding by means of a stomach or nasal tube is frequently used in asylums, but there can be few occasions when the necessity for it arises in a general hospital. It is true that nasal feeding is frequently used in general hospitals, but in such cases the patients usually give the nurse every help possible, except where paralysis, or, with children at the first attempt, fright prevents them from assisting in the operation to the best of their ability. Such feeding is not forced, is certainly not brutal, and is not unpleasant, as the indignant protesters in Parliament may easily find if they have the courage to pass a tube on themselves. What makes the asylum system of forced feeding unpleasant is the fact that a fairly large œsophageal tube is used which is passed on a patient, secured in the usual manner by blankets or manual restraint—certainly never by chains—who obstinately refuses his food. Such a patient is, in many instances, incapable of comprehending what is being done on his behalf, and fights savagely, not, as is popularly supposed, be-

cause he has the strength of ten, but because he is possessed of the reckless disregard of consequences to himself and others which is so characteristic of the insane. The operation is, therefore, as unpleasant to the operators as it is to the patient, and in a sense it is "brutal," just as much as cauterising a nævus in a small child is "brutal." But in both cases there is justification for whatever unpleasantness may be inflicted. The women who have been subjected to "forced feeding" are experiencing nothing worse than has been experienced in past times by refractory male prisoners who stubbornly refused their food. The alternative is to allow such prisoners to starve, for no sensible person can ever admit that they should be released merely because they please to cavil at the prison fare supplied to them.

Hitherto no protest has been made on behalf of the male prisoners who have been forcibly fed, and it is illogical, to say the least, to demand that women, who claim to stand on the same level with men politically, socially and communally, should be accorded privileges which have so far been theirs just because of those differences, politically, communally, and socially, between them and men which they desire to do away with. On these claims and these desires we express at present no opinion, but we have no hesitation in saying that in our opinion the action of the prison authorities, provided it has been carried on with the necessary decency and care that forced feeding, especially in the case of women patients' demands, is fully justified in the circumstances. Certainly medical men know too well the mischief to health that may arise from the absurd practices often indulged in by prisoners to attempt evasions of their punishment to waste much sympathy on the foolish women at Winson Green.

f.3r

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From

YORKSHIRE POST.

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DEC 20 1909

EUGENICS AND THE RACE.

AN ADDRESS BY SIR JOHN COCKBURN.

"The Principles of Eugenics" was the subject of an address delivered by Sir John Cockburn before a large audience on Saturday afternoon, at the Philosophical Hall, Leeds. The occasion was the reunion of past and present students of the Training College Societies of the University of Leeds, and the Vice-Chancellor of the University (Sir Nathan Bodington) occupied the chair. The Vicar of Leeds (Dr. Bickersteth) and Dr. Forsyth (principal of the Leeds Central High School) were also on the platform.

Sir John Cockburn spoke of the increasing tendency to apply the doctrines of Darwinism with regard to the selection and survival of society, holding that individual laws with regard to the organism related equally to the social organism. Touching on the conventions and their effect on life, the speaker urged that "we don't want to abolish Mrs. Grundy; we want to educate Mrs. Grundy." (Applause.) There should be no disgrace in marrying outside one's own caste. (Hear, hear.) Sometimes, indeed, such a course was a very good thing. But disgrace ought to attach to the marriage of defectives. In these cases marriage ought to be prohibited. (Hear, hear.) There ought to be a strong social conscience in favour of health; and health versus bank balance should be the criterion of a suitable alliance. (Applause.)

For the first time in our history, Sir John went on, the Budget recognised that it was good for citizens to become heads of families. And he had strongly advocated the same course being taken in Australia. Naturally, the proposal had been scoffed at. The Stock Exchange wits had said: We will all have to sell our motor cars and buy perambulators." (Laughter.) Still it was a fair and reasonable proposal. (Hear, hear.) He was not exactly suggesting a bachelor tax. But they ought to look to the question of providing healthy subjects of the Empire. (Hear, hear.) Women nowadays no longer looked forward to marriage as their own means of livelihood. "Take nature into partnership if you want her to do anything for you," was Sir John's final word.

Dr. Forsyth, in proposing a vote of thanks to Sir John Cockburn, appealed to teachers to think of their immense responsibilities, which were becoming even greater. They were the makers of the nation. Whether they were teaching in an infant class—where the nature of the children was more plastic—or whether in a secondary school, they were dealing first with the men and women who were to be the rulers of the nation. There were no signs of decadence in the first rank of the English people; and they as teachers could do more than even yet had been done for the next generation. They had much need to study eugenics for their own sake. They had to see to it, too, for the sake of the children, that they were wise, patient, sane, and noble. (Applause.)

The resolution was seconded, and carried with enthusiasm.

Dr. J. Galton 4. 65

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EUGENICS.

THE PROBLEM OF THE RACE.

Mr. C. W. Wilson last night lectured before the members of the Birmingham Rationalist Association, at the Imperial Hotel, on "Eugenics." Having traced the progress of the movement started by Sir Francis Galton, the lecturer defined national eugenics as the study of agencies under social control that improved or impaired the racial qualities of future generations either physically or mentally. The problem had been stated almost in a sentence by Professor Karl Pearson, who said: "We are ceasing as a nation to breed intelligence as we did fifty or one hundred years ago. The mentally better stock is not reproducing itself at the same rate as it did of old; the less able and the less energetic are more fertile than the better stocks. No scheme of wider or more thorough education will bring up in the scale of intelligence hereditary weakness to the level of hereditary strength. The only remedy, if one be possible, is to alter the relative fertility of the good and the bad stocks in the community." There were numerous obstacles in the way of eugenic progress, chief among which were ignorance and mis-statement. There was much wild and absurd talk about lethal chambers, the right to live, and forcible marriages. Of course mysticism, dogma, and custom—or, as Schiller said, "the everlasting yesterday"—were impediments, as they always had been, to progress. Amongst matters needing early attention from the eugenic standpoint were marriage examinations and certificates, segregation of the unfit, restriction of undesirables falling upon the State for support, alcoholism, the better preparation of girls for motherhood, and the relation of child-bearing to woman labour. The lecturer urged that family records should be kept of physical ailments and of the measurements of height and weight of each individual, which should be taken periodically. Such records, he claimed, were the natural birthright of every child.

4.7r
Sir F Galton

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BREEDING UNDESIRABLES.

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From **MANCHESTER GUARDIAN,**
3, Cross Street, MANCHESTER.

29 JUN 1910

A Positivist on Heredity.

MR. S. H. SWINNY in the July "Positivist Review" writes on Eugenics, and makes some good and entertaining points. One is that eugenics has always been practised, only our ignorant ancestors called it falling in love. Another is the difficulty whether, leaving the unfit out of account, we are to aim at producing a good general average, in which case best and worst, second best and those just above the worst should mate, or at improvement of the race by mating best with best, in which case we might get at a permanence of low types at the bottom. But perhaps the most interesting passage in Mr. SWINNY's article is that in which he criticises the eugenist's neglect of environment in comparison with heredity. We recently printed a letter from Professor KARL PEARSON which exhibited this tendency in a very marked degree; Professor PEARSON went out of his way even to attack Liberal efforts to improve environment as essentially unscientific. "To assert," says Mr. SWINNY, "that all the human heritage of religion and philosophy, science and art, all national tradition and civic order, the discipline of industry, the influence of home and parents, of school and teachers, of comrades in work and play, through all the varied relationships of men with each other and with the world round them, down to the barest physical necessities of food and air—to assert that all these are . . . of so little importance that they may be treated as negligible quantities to be put aside without consideration is one of the most astounding propositions ever put forward." He quotes very aptly a concrete illustration from the celibacy of the clergy in the Middle Ages. The intellectual life in Europe in the Middle Ages was confined to the Church, and the clergy were celibate. If heredity alone counted, as the celibacy of the clergy became more strict the intellectual powers of the race should have become weaker. In fact HILDEBRAND's iron discipline coincided with the rise of the scholastic philosophy under ANSELM. "In the next two centuries celibacy was insisted on with greater rigour than even before, and instead of a progressive deterioration of the Western intellect there was a continuous advance, culminating at the end of the period in one of the greatest eras of the human mind, the century of St. THOMAS AQUINAS, ROGER BACON, and DANTE." No doubt the celibacy of the clergy did retard human progress, but this tendency was certainly counteracted by other forces. How, asks Mr. SWINNY, can it be argued in the face of this case that all other forces save heredity may be neglected?

(Dr)

See 7. Galt

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From **MORNING ADVERTISER,**
127, Fleet Street, E.C.

HEREDITY AND EUGENICS.

THE DANGER OF SOCIALISM.

Speaking on the subject of "Heredity and Eugenics," at the Victoria Institute, Adelphi-terrace House, Strand, yesterday afternoon, the Rev. Professor A. CALDECOTT, M.A., D.D., of King's College, London University, said that if they reviewed the course of civilisation they found that its advance had been along the lines of an ever-growing respect for personality, an ever-increasing confidence in its inherent powers, and a constant enlarging of its privileges and rights. Social evolution, or civilisation, was not produced after the manner of biological processes, but by the conscious interposition of ideas and ideals, of which personality was the seat.

In so far, therefore, as eugenics was advocated on grounds which ignored a personality, or at least reduced the range of its powers and its rights, they had evidently before them an endeavour to stem the tide of civilisation as they knew it, and to reverse the course which it had taken by a resort to social action which placed a slight estimate on individuality, a resort which was in many respects a recurrence to the methods of society in times they thought they had passed through, in Europe at least. The sentiment of individuality so slowly formed was being challenged once more; the claims of the race were being reasserted as supreme, and the guidance of human life in its tenderest and most intimate relationships was being removed from the range of personal to that of collective wisdom and responsibility.

So great a revolution in moral and social policy must divide men into opposing camps, and he could see signs of an approaching conflict which would dwarf into triviality many of the contentions which at present caused differences and oppositions. From the point of view of the Christian, he held that they were called upon to decline to follow any attempt to claim heredity for the personal spirit of man in its own central selfhood, and in its large power of taking up and controlling the lower processes of consciousness. As regards eugenics, he was sure that the amelioration of society must rest ultimately on appeal to the voluntary choice of the individual, for he considered it was reactionary to think of sacrificing the freedom of human action.

fillr

Sir Galton

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A COMPLETE NEWSPAPER.—See Back.

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The Galton Laboratory.

The work of Dr. Karl Pearson and his assistants at the eugenic laboratory is evidently of great value to the schools. At present Dr. Pearson is himself working in the school mentioned in the last paragraph, i.e., the Jews' Free School. The publications of the eugenic section of London's University work have been frequently noticed in these columns, and reference has been made to the system of comparing stature, eyesight, and general intelligence with the home influences which surround the children. A good many of these investigations have been confessedly lacking in value, because of the insufficiency of the data procurable. The investigators have now a chance which should gladden their hearts. They are daily taking all kinds of anthropometric measurements, including careful ophthalmic tests of 600 boys and 600 girls selected at random—the headmaster could, without any trouble, supply them with more than twice as many of each sex. All of these are being reported on by their teachers, and their home life is being carefully investigated by visitors. The effects of hereditary and home environment on the various physical qualities of children are, therefore, likely to be elucidated in an unprecedented manner. The investigations are naturally limited to a single race of people, but as strenuous endeavours are to be put forward to carry out similar inquiries elsewhere, both amongst Celts and Saxons, really valuable results may be expected. One of the most interesting of the set of measurements, and one which is most likely to be of help to the school master in arranging his syllabus, is that which has to do with the children's eyes. The exact amount of time spent weekly in writing and reading in school, and the probable amount of reading done out of school—an amount quite easily estimated by a school master who knows his business—are worked out by the teachers for each individual. The state of the eyes is tabulated by an ophthalmic surgeon, and the conditions of light in home and school are worked out by members of the Galton Laboratory staff. What the eventual result of the investigations may be remains to be seen; but the immediate benefit to the children who are receiving all this additional care should be very great.

Sir F Galton

f. 171-

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From

THE WORLD,

1, York Street, Covent Garden, E.C.

30 MAR 1910

Sir Francis Galton has delighted the Radical party with his latest pronouncement, to the effect that primogeniture is not in the best interests of the country, since the younger sons are usually superior to the eldest. As Sir Francis was himself the third son in his family, the remarkable modesty of his discovery lends it added weight. But even if it could be demonstrated that the younger sons have most distinguished themselves in various walks of life, does this prove anything more than that the eldest was usually bound to look after his property, with all its obligations, and was not therefore free to take up public or private work of the kind which gives opportunities for distinction?

Mr F Galton f.18

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From

THE QUEEN,
Bream's Buildings, E.C.

16 APR 1910

The Veto question has brought forth many opinions on the subject of heredity and primogeniture. Mr Francis Galton's letter to the *Times* was of great interest, but his views may never come within the range of practical politics. He suggests that the claims of heredity would be better satisfied if all the sons of peers were eligible for peerages, and if a selection were made of the most suitable.

And he bases this theory on the fact that recent research has shown that the eldest born are, as a rule, inferior in natural gifts to the younger born, in a degree that may be small but that is significant. A well-known statesman gave me his opinions on the subject. He said that he was opposed to the hereditary principle as applied to the Second Chamber, but still more so to primogeniture, and this on the grounds that an eldest son is often the least intelligent. And he quoted as instances of clever younger sons the late Lord Salisbury, the late Mr Gladstone, the younger Pitt, and the first Duke of Wellington. And Napoleon was also a younger son. This gives one to think; but the rule, of course, has many exceptions.

GALTON/2/13/1/4

F.1

Letters from K.P.

| Subject | Paper | Date | |
|-----------------------------|-----------|--------------|--|
| Consu. Marriages | B.M.J. | 1908 June 6 | |
| Inquir. Sc. & Med. Journals | Nature | 1909 May 6 | |
| National Deterioration | Times | 1905 Aug 25 | 2 Copies |
| Heredity & Environment | B.M.J. | 1910 July 3 | |
| Primogeniture & Heredity | Times | 1910 Mar 31 | |
| Heredity & Crime | M. Post | 1911 Oct. 22 | |
| " | M. Post | " Nov 2 | |
| " | Times | " Nov 8 | |
| " | M. Post | " Nov 8 | |
| " | Times | " Nov 10 | |
| " | M. Post | " " 16 | |
| " | M. Post | " " 28 | |
| Alcoholism & Efficiency | Times | 1910 July 12 | reply to Prof. Marshall |
| " " Offspring | " | 1910 June 14 | - Darwin Reid C. Thorpe. ^{2 Copies} |
| " | " | " " 24 | - C. Thorpe |
| Alcohol & Degeneracy | " | 1911 Jan 16 | Horsley Sturge |
| Owitz " " | D. Chron. | 1910 Nov 9 | - T.P. Whitaker |
| V. Horsley & G. Lab. | Times | 1911 Jan 12 | - to V.H. |
| | " | " " 13 | - - V.H. |

that region. How, then, will an individual well be affected in whose case sewage finds entrance? Organic matter will increase, and especially will this be true of nitrogenous organic matter; phosphates and chlorides will be increased, nitrites and nitrates may be found in it, and a bacteriological examination may reveal the presence of the colon bacillus. To determine all this, of course a full analysis is needed. What I propose to do is to confine attention to some one characteristic and to select that one which is most surely and certainly determined. This I find to be the chlorine in chlorides.

Having thus a standard, so to speak, established, he analysed the water of a large number of the wells in the towns referred to, the chlorine varying from 2 parts per million up to 370. These analyses go to prove that the wells are dug in soil which is more or less saturated with sewage; none of them seem to be protected by a backing of any kind from soakage, and consequently most of them are contaminated with sewage which has undergone no such amelioration by soil filtration as would have resulted from proper construction.

CORRESPONDENCE.

COUSIN MARRIAGES.

SIR,—Through the kindness of the readers of your JOURNAL, I have received data bearing on about 1,600 marriages. I owe to Miss Ethel Elderton, of the Francis Galton Laboratory for National Eugenics, the tabling of the material with the following results:

| | | | |
|-------------------------|-----|-----|----------------|
| First cousin marriages | ... | ... | 4.69 per cent. |
| Second cousin marriages | ... | ... | 1.69 " |
| Third cousin marriages | ... | ... | 0.25 " |
| Other cousin marriages | ... | ... | 1.13 " |

The latter marriages include the marriages of children of half brothers or sisters, fourth cousins, consins removed in various degrees, and the marriage of persons who are consins in more than one line. Such marriages, therefore, may be closer in blood than second or third cousin marriages. The total of consanguineous marriages in this material is thus 7.76 per cent., as far as the recorders have knowledge. If we consider the various generations we have the following results:

| | | |
|---|-----|----------------|
| Present generation of correspondents | ... | 8.37 per cent. |
| Generation of correspondents' parents | ... | 16.15 " |
| Generation of correspondents' grand-parents | ... | 3.62 " |

Now these results would compel us to believe that the tendency to cousin marriage has varied very considerably in the three generations, if our data really covers a random sample of the medical profession. I am inclined to hold, however, that a great many of my correspondents replied because they were the children of consins or had married consins, thus unconsciously damaging the random character of the sample. If this be so, then it follows that the 3.6 per cent. of the grandparental generation is a closer approach than the whole series to the actual amount of consanguineous matrimony in the professional classes. We tested this view by separating the data received before and after my second letter to the BRITISH MEDICAL JOURNAL, with the following result:

| | Percentage of Cousin Marriages. | |
|--------------------------|---------------------------------|-------------|
| | Earlier Data. | Later Data. |
| Present generation | 9.15 | 5.63 |
| Parental generation | 20.51 | 4.76 |
| Grandparental generation | 2.82 | 6.09 |

I think this shows that the purpose of my first appeal was to some extent misinterpreted, and that a good many replies were received because my correspondents were the children of consins, or had married consins. The later data, however, are not very different for the different generations, and point to an average of 5.5 cousin marriages per cent. Thus my view of the best conclusion to be drawn from the present material is that consanguineous marriages in the professional classes probably occur in less than 8 per cent. and more than 5 per cent. of cases. That I cannot put the result more definitely than this will, I think, show the great difficulty there is in settling even such an apparently simple problem as the frequency of cousin marriage.

Owing to the great kindness of Dr. A. E. Garrod, senior physician to the Great Ormond Street Hospital for Children, certain casebooks at this hospital were kindly placed at our disposal, with a view to extracting the amount of consanguineous matrimony in another class of

the population. For a period of some years the question as to whether the parents of the children brought to the hospital were consins or not was asked. Mr. D. Heron, of the Galton Laboratory, worked through the available material, and, after excluding duplicates, he found definite statements as to consanguinity in the cases of 700 pairs of parents. Among these there were 6 cases of first cousin marriages, 1 case of second consins, 1 case of third consins, and 1 case of first consins once removed, or only 9 cases in 700 pairs, giving a consanguinity rate of 1.3 per cent. Now this result is of much interest, if the patients' parents can be relied upon for accurate information. It would appear to show—

1. That the diseases of children are not largely due to any consanguinity between their parents, and

2. That the population of our large towns rapidly drifts away from its relatives, so that little cousin marriage takes place compared with what is to be found in the professional classes. I am hoping shortly to test the frequency of cousin marriages among a rural population.

I regret that the above numbers are largely irregular and can give no final answer to an important problem. But I think they justify me in saying that until the percentage of cousin marriages reaches 10 or more per cent. in a selected class of the population, it would be rash to suppose that any characteristic of that class is the result of in-breeding. If cousin marriages are found to occur in 10 or more per cent. of cases among the parents of the insane or tuberculous, then I think the effect of consanguinity deserves full consideration.

I cannot conclude without most heartily thanking those members of the medical profession who have so kindly replied to my request, often with very ample material. If my data are not more conclusive it is the fault of those who have omitted to answer, not of those who have. If 400 persons would write down whether the first ten persons they meet of their acquaintance had or had not married consins, this all-important problem could be definitely answered in ten days:—I am, etc.,

KARL PEARSON.

Biometric Laboratory, University College, London, W.C.,
May 29th.

A NEW VIEW OF THE NOTIFICATION OF BIRTHS ACT.

SIR—Dr. Brennan does me the honour of asking me a "question," so I will once more trouble you with a letter, otherwise I should have been quite content to have left your readers to judge between us.

Possibly I should have another reason—gratitude for gratuitous instruction in the methods of controversy. In return, even at the risk of Dr. Brennan calling it, in one of his stock Latin phrases, an *et tu queque*, I will suggest that the first elements of all valuable controversy are clear thinking and the correct use of words.

My answer to his "question" is that it is not a question but a confusion, reminding one of the schoolboy's "if a herring and a half cost three-halfpence, at what time does the London express stop at Crewe?" His scheme does not necessarily leave the patient in the hands of her medical attendant, and mine certainly does not fail to make any provision for her, or leave her absolutely in the hands of the sanitary authority.

The question of the interests of the profession and the interests of the patient are separate matters, and whether the medical man notifies or not, his relation to his patient is precisely the same.

Then comes a lot of talk about "right of entry." Dr. Brennan says, "The vitally important question in this Act is right of entry," while, as a matter of fact there is not a single word about any such thing from the first line of the Act to the last. What right of entry there is exists entirely apart from this Act. It is a power conferred on sanitary and other authorities by Parliament, and is in no way touched by this Act nor by any arrangements Dr. Brennan and his friends may make.

Dr. Brennan claims he has made a bargain; but indeed, he has not, for the essential part of all bargains is a consideration on both sides. He receives no consideration in return for becoming, as he admits, for all time, a notice distributor for the sanitary authority, or whatever other title he prefers.

It is true the sanitary authority may forego the act of inspection when it thinks it desirable or in its interest to

do so, but the right remains absolutely unimpaired and may be exercised whenever the authority thinks fit, or even at its whim. It is puerile to talk of us giving the sanitary authority permission to visit our patients when we have no *locus standi* or authority whatever in the matter.

"Right of entry" is a matter between the public and Parliament. If it is wrong it is for the public to force Parliament to remove it. Our business is to take care of ourselves. The public may be relied on to take care of itself.

The worst enemies the profession has are those of its own number who are willing at all times to place on the profession any indignity in what they call the interests of the public. These men are always insisting that the interests of the public or the interests of the patient must always take precedence of the interests of the profession. For my part I agree with an old friend of mine who when asked to accept a lower fee replied, "In the interest of the public I should be most pleased to accept half a crown, but in the interests of my wife and family I am bound to demand three and six." And after all it is not in the interests of the public to treat medical men badly, for by so doing they keep the best men out of the profession and lower the standard of its value to the community.—I am, etc.,

Liverpool, June 1st.

F. CHARLES LARKIN.

SIR,—We are told (BRITISH MEDICAL JOURNAL, May 30th, p. 1331) that the vitally important question in this Act is "right of entry." I had imagined that the vitally important question, from our point of view, was the gross injustice dealt out to us, both as professional men and as citizens. "Right of entry" might be vitally important if it existed, but it does not exist; it is a bogey, and would be worth no consideration in your columns but for the fact that it seems to have materialized into a "red herring," and might make some of us lose scent of the main issue. Neither the health visitor nor the sanitary authority has any "right of entry" at all; the patient (or householder) has most certainly a very definite "right of exclusion." The doctor has the right of advising his patient, and that is all. Does Dr. Brennan really mean us to understand that he and his brethren and their sanitary authority have arrogated to themselves the "right" to force the health visitor into one house or exclude her from another, irrespective of the wishes of the householder? Do the citizens of Stockport understand this and concur? He twits Mr. Larkin with waiving a "right" which Mr. Larkin has never possessed or, so far as I know, claimed. When he accepted this Act as a basis for bargaining with the sanitary authority and recommended its adoption. Dr. Brennan waived his own right, and the right of the profession, to be treated in our Legislature at least as well as other citizens, and he waived the right of our profession to keep strictly the secrets of our less fortunate patients. Now, by way of compensation, I suppose, he claims this new right of exclusion as a set-off to the non-existent "right of entry," which he apparently claims for the sanitary authority, ignoring altogether the desires of his patients and fellow citizens. Does he do all this in the interests of the public or of the profession? It is difficult to see how the interests of either are advanced by his method of procedure. If we advise our patients beforehand that the services of the visitor are neither necessary nor desirable while we are in attendance, tell them that the visitor has absolutely no "right of entry" against their inclinations, and that we will stick up for this "right of exclusion," if the visitor is stupid enough to intrude after being told she is not required, we shall be exercising our own "right" and effectually safeguarding our own and our patient's interests, unless the patient decides to neglect our advice, in which case the responsibility is no longer ours. There is no need to bargain with the sanitary authority about this nebulous "right of entry," and we shall best consult our own dignity by not bargaining at all, but sticking fast to our own right of advising our patients, and maintaining, if necessary, our patient's right to decide who shall and who shall not enter his house and minister to his household.

Now as to the really "vitally important question" in this Act. It is recognized by the profession and laity alike that

Parliament or the Government has no right whatever to (1) make us notify without the mother's consent, or (2) make us notify (or secure notification) under a penalty without offering a *quid pro quo*. In this Act it tries to do both, and if socialism were the accepted governing principle of this country, it would perhaps be quite justified in the second instance, though not in the first. But socialism is not yet accepted here, and there is no valid reason why our profession should be the first to suffer under socialistic experiments, even with the midwives as fellow-sufferers. Those of us who are not socialists are quite justified in resenting the experiment, and showing our resentment by opposing the Act in every possible way until its defects are remedied. The fact that the Act has decided germs of good in it is no reason for condoning the evil in it. First get the evil removed, and then help to get all the possible good out of the Act. This seems to me a straightforward sensible policy, worthy of our profession, far more worthy than any weak-backed condonation of the evil by refusing to understand the obvious meaning of Clause I, 1, relying on the "mercy" of the sanitary authorities in administering it, and generally wriggling under its provisions.

We have made some mistakes; the first and worst was when we decided not to oppose the bill, on the ground that it involved a breach of professional confidence in certain cases. Because a lawyer told us that we could not be legally penalized for the breach of confidence after the bill became law, we threw aside our most powerful and most honourable weapon—the one argument which appeals very strongly to the lay mind, the humanitarian argument—and relied solely on a political argument, with the result that an astute politician managed to delude the House into the idea that all we wanted was "fees," not justice. After that certain bodies of medical men hastily recommended their sanitary authorities to adopt the Act, thus compromising the attitude of the bulk of the profession towards it. Even now some of us spend our time haggling about the best method of carrying out the provisions of the Act without injuring our dignity, pretending it does not say what it does say, or does not mean what it obviously does mean and was intended to mean—in fact, in condoning the evil in it. Shall we not pull ourselves together and unite in trying to repair our mistakes—the last first, by ceasing to haggle over unessentials and generally "wriggling"?

Let us strive for amendment of the Act, strenuously oppose any further adoption of it, and do nothing at all to give any one the impression that there is not so much harm in the Act after all. Where it is already adopted, let any one who feels it his duty to do so notify or secure notification by any method he chooses, but let there be no combined or united attempt to smooth out the Act or make it work satisfactorily. Let us impress on our lay friends the fact that we are badly treated, and not forget to point out to them that their turn may come next if the Act is allowed to stand as a precedent. When the Act is amended, and we are once more free citizens, we can begin to quarrel as to the best method of assisting the sanitary authorities in administering it, whether by filling in forms, distributing handbills, or harrying newly-made fathers with instructions. For the present we had better stick up for principles and leave details alone, except such as tend towards amendment of the Act.

Will not Mr. Larkin agree with me in *toto*? Or is he too heavily handicapped by the precipitate action of some of his neighbours a few months ago? Cannot he convert them? Surely it is worth trying.—I am, etc.,

Swinton, Manchester, May 31st.

J. PRICE WILLIAMS.

EPSOM COLLEGE.

SIR,—As a Governor of Epsom College I receive many distressing appeals for my votes. To these, when they come to me through friends, I reply that I put my votes at the disposal of the Selection Committee, in whose pains, judgement, and impartiality I have entire confidence. Lately, however, a sturdy canvasser, a personal friend, took the trouble to come over and shake my confidence. He agreed with me that canvassing is an evil in itself, that it tends to defeat the very objects of a charity, and sighed over the real or fancied necessity of giving a *quid pro quo* to a certain class of charitably-disposed persons. But his agreement was only an abstract one

the second child, but there is no conclusive evidence that after a mother has had two children there is any change in her tendencies.

In the *Monthly Review* for August Mr. J. E. S. Moore discusses "the cancer problem to-day," in which he details recent investigations into the cytology of malignant growths; and in the *Fortnightly Review* Dr. Alfred Mumford writes on the alleged physical degeneration of the race. The general trend of this article is that the deterioration in the vigour and health of the British race as a whole has been exaggerated, and that all the combined effort of the past for the permanent improvement of the race cannot have been without result.

At a special meeting of the *Accademia dei Lincei* held on June 5, the results of the competition, which closed on December 31, 1902, for the royal prizes of the academy were made known. In the section of philology, a royal prize is awarded to Prof. A. Trombetti for a work on the genealogical connection between the languages of the ancient world. The prize for astronomy is divided between Prof. E. Millosevitch and Vincenzo Reina, and that for philosophical science between Prof. Sante Ferrari and Prof. Covotti. To celebrate the tercentenary of the academy, which is the oldest institution of its kind in the world, it is announced that Prof. Pirotta is preparing for publication the botanical works of Prince Federico Cesi, who, with Galileo Galilei, founded the *Lincei* in 1603.

In the *Physikalische Zeitschrift* (No. 15) H. Mache concludes that the emanation from the Gastein thermal spring, which is so strongly radio-active, is identical with that of radium, as the activity of both emanations decays according to the same law. Moreover, the activity induced in other bodies by the emanation from the water is of the same character as that caused under similar conditions by radium. In the same number E. F. Burton shows that the diminution in the conductivity of air enclosed in a metal vessel which is produced by surrounding the vessel with water is proportional to the thickness of the aqueous layer. The view that the radiations causing the discharge come from an external source is thus confirmed. It is also shown that, on diminishing the pressure of air in the vessel surrounded by water, the conductivity falls off continuously with the change of pressure.

In the *Physical Review* for June, E. L. Nichols and Ernest Merritt give an experimental confirmation of Lommel's contradiction of Stokes's law that, in fluorescence, the fluorescent light is always of greater wave-length than the exciting light. The variation in the intensity of the light throughout the fluorescence spectra of such substances as fluorescein, eosin, and naphthalene-red was measured by means of a spectrophotometer, and it is shown that, whatever be the wave-length of the exciting light, the curve connecting intensity of light with wave-length in the fluorescence spectrum is always of the same character. The maximum of intensity in the excited spectrum may have a wave-length much smaller than that of the exciting source. Thus in the case of eosin, with an exciting light of wave-length λ 585-605, the maximum in the fluorescence spectrum is at λ 580, the whole spectrum extending from λ 535 to λ 640.

PART II. of the *Bulletin* of the French Physical Society for 1904 contains a description by A. Turpain of a new apparatus for cleaning large quantities of mercury. The

cleaning agent is a solution of mercurous nitrate, and the mercury, after being cleaned, is dried by means of concentrated sulphuric acid, any free acid in the mercury being subsequently removed by potash. The apparatus works automatically during long periods, and needs little attention.

In the July number of the *American Journal of Science* Mr. H. A. Bumstead describes experiments on atmospheric radio-activity, which indicate that the activity acquired by a negatively charged wire exposed in the open air at New Haven, is of a two-fold character. From the rate of decay it is concluded that thorium as well as radium excited activity is present. With a three-hour exposure of the wire, 3 to 5 per cent. of the initial effect is due to the thorium activity, and with a twelve-hour exposure the thorium activity is sometimes 15 per cent. of the whole. Messrs. Trowbridge and Rollins communicate that the electrical resistance of an aluminium wire is not altered to a measurable extent when subjected to the action of radium.

THE *Geographical Journal* for August contains a very clear map showing the work of the National Antarctic Expedition. The map is the work of Lieut. Mulock, R.N., who joined the *Discovery* from the *Morning* in February, 1903. The positions fixed by observations, magnetic variations, soundings, heights, and the tracks of the sledge travellers are clearly shown, as well as the track of the ship to her furthest point along the coast of King Edward VII. Land. An inset map shows the position of the discoveries with reference to the circumpolar area. The same number also contains the paper on "The German Antarctic Expedition" which was read before the Royal Geographical Society in April last by Dr. E. von Drygalski. It is illustrated by some remarkable reproductions of photographs of icebergs, &c.

THE current *Century Magazine* contains two contributions which should be of interest to all students of nature, one, by that careful American observer, John Burroughs, on "What do Animals Know?" in the course of which a good deal of out-of-the-way knowledge is given in a charming manner, the other, illustrated by some striking engravings (one in colour), on "The Colossal Bridges of Utah," which deals with the wonderful arches or natural bridges that are to be found near the head of White Cañon, in San Juan County, Utah. One of these bridges, named by the discoverers the Caroline, measures two hundred and eight feet six inches from buttress to buttress across the bottom of the cañon. Its height is one hundred and ninety-seven feet from the surface of the water, while its thickness at its highest point is one hundred and twenty-five feet. The floor of the bridge is one hundred and twenty-seven feet wide, so that, as is pointed out, an army could march over it in columns of companies, and still leave room at the side for a continuous stream of artillery and baggage waggons. Two other magnificent bridges, named respectively the Augusta Bridge and the Little Bridge, are described and figured in the article, which is well worth perusal.

OUR ASTRONOMICAL COLUMN.

EPHEMERIS FOR ENCKE'S COMET.—A set of elements for Encke's comet, corrected only for the Jupiter perturbations of the first order between 1901 and 1904, is published by MM. Kaminsky and Ocoulitsch in No. 3962 of the *Astronomische Nachrichten*. These elements are given below, together with an extract from a daily ephemeris for the period August 1 to October 16:—

Epoch and Osculation 1904 November 9.0 (M.T. Berlin).

$$\begin{aligned} M &= 341 \quad 3 \quad 39 \\ \pi &= 159 \quad 2 \quad 39 \\ \Delta &= 334 \quad 27 \quad 8 \\ i &= 12 \quad 35 \quad 37 \\ \phi &= 57 \quad 54 \quad 20 \\ \mu &= 1075 \quad 666 \\ \log a &= 0.34555 \\ T &= 1905 \text{ Jan. 11d. 8.8h. M.T. Berlin.} \end{aligned}$$

Ephemeris oh. (M.T. Berlin).

| 1904 | | a (app.) h. m. s. | z (app.) | log r | log d |
|---------|-----|----------------------|----------|--------|--------|
| Aug. 13 | ... | 1 51 3 | +21 10.2 | 0.3685 | 0.2634 |
| " 17 | ... | 1 52 13 | +21 45.0 | 0.3615 | 0.2421 |
| " 21 | ... | 1 52 57 | +22 19.8 | 0.3542 | 0.2201 |
| " 25 | ... | 1 53 14 | +22 55.1 | 0.3467 | 0.1970 |
| " 29 | ... | 1 52 59 | +23 30.4 | 0.3390 | 0.1732 |
| Sept. 2 | ... | 1 52 9 | +24 5.7 | 0.3309 | 0.1485 |
| " 4 | ... | 1 51 28 | +24 23.4 | 0.3268 | 0.1358 |
| " 6 | ... | 1 50 36 | +24 41.2 | 0.3226 | 0.1229 |

THE REVISION OF THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG.—In the third volume of the Cape Durchmusterung Sir David Gill referred to several lists of stars which Prof. Kapteyn had prepared in order that the objects might be re-observed and the origins of the discrepancies between the Cape and other catalogues discovered. The work of revision was commenced by Mr. Finlay, but has been continued, since 1896, by Mr. Innes. Parts i., ii., and iii. of vol. ix. of the Cape Observatory Annals contain the results of this revision, giving the observer's full notes and copious remarks concerning each object observed. Mr. Innes believes that not a single uncoloured star of the ninth magnitude or brighter, and south of declination -19° , is now missing from the catalogue.

Many of the questionable objects have been found to be variables or highly coloured, whilst others are fainter than the ninth magnitude. Part ii. is especially devoted to full particulars of each variable star observed at the Cape between 1896 and 1902, the elements, the curve, the region-charts, and all the available information—or references to the same—being given for each of the seventy-three objects observed.

A summary of the number of stars in the C.P.D. exhibits several interesting points. For example, whereas M. Stratonoff found that the B.D. (dec. $+90^\circ$ to -20°) gave a mean of 4.895 stars brighter than the ninth magnitude for every square degree, the corresponding value in the C.P.D. (dec. -19° to -90°) is 5.85. Part of this difference, at least, may, however, be due to a difference of magnitude standards. The total number of stars now contained in the C.P.D. is 91,358, and the richest region is near to η Argus, for in the -59° zone, between 10h. and 11h., there are 256 stars, or 32.7 per square degree, brighter than the ninth magnitude.

Part iii. tabulates, and comments on, the errors found by Prof. Kapteyn—and others discovered since—in other southern star catalogues for the regions south of dec. -19° , and concludes with a table of reference to all the published errata.

DETERMINATION OF LATITUDE AND ITS VARIATIONS.—In No. 3962 of the *Astronomische Nachrichten* M. E. Bijl, of the Royal Belgian Observatory at Uccle, gives the results of 685 determinations of latitude made by him during the period 1898.4–1899.5. The table given shows the time of each observation and the corresponding latitudes as deduced from the star positions given in the Berliner Jahrbuch and Newcomb's catalogue respectively. There is a constantly positive value for the difference Newcomb-B.J. of something of the order of $+0.6$. The resulting latitudes show a range of about 0.7 with a maximum at 1888.6, a minimum at 1889.0, and a lower maximum at 1889.3–1889.4.

THE STANDARDISATION OF ROWLAND'S WAVE-LENGTHS.—In an article appearing in No. 1, vol. xx., of the *Astro-physical Journal*, Prof. Hartmann answers the criticisms which have been passed on the proposals of his previous article, wherein he strongly urged the standardisation of Rowland's wave-lengths to a uniform relative scale. It

has been urged that Michelson's absolute values should be used for the construction of an absolute scale, but Prof. Hartmann points out that the adoption of this idea would necessitate a wholesale revision each time a new estimate of the absolute wave-lengths was made.

In lieu of this he again suggests that the wave-length of the red line in the cadmium spark spectrum in air at $+20^\circ$ C. and 760 mm. pressure be adopted as $\lambda = 6438.6911$ for all time, and that a coordination of a system of relative wave-lengths should be made with this as the standard.

The most urgent need before such a system can be completed is that an observer having the control of a large grating spectrograph shall continue Kayser's work in establishing a system of standard iron lines in the region as yet untouched by that observer. This need supplied, the values obtained by Michelson, Hamy, Fabry and Perot for a number of metals would furnish the connecting links for the completion of the proposed system.

SATURN'S NINTH SATELLITE.—From a note by Prof. E. C. Pickering in No. 3962 of the *Astronomische Nachrichten*, it appears that the position angles and distances of the satellite Phœbe, which were recently published in a *Kiel Circular*, were obtained from an ephemeris corrected to agree with the positions determined from eleven photographs obtained by Prof. Frost at Arequipa. These allowed the path of the satellite to be followed from April 16 to June 9.

DISTRIBUTION OF SUCCESSES AND OF NATURAL ABILITY AMONG THE KINSFOLK OF FELLOWS OF THE ROYAL SOCIETY.

THE result of this inquiry is to prove the existence of a small number of more or less isolated hereditary centres, round which a large part of the total ability of the nation is clustered, with a closeness that rapidly diminishes as the distance of kinship from its centre increases.

The materials are derived from the replies to a circular which I sent with a blank schedule, to all fellows of the Royal Society, asking for the names and achievements of their "noteworthy" kinsfolk in each degree of near kinship as specified in the schedule. Noteworthiness was defined as including any success that was, in the opinion of the sender, at least equal in its way to that in which the honour of a fellowship of the Royal Society is held by scientific men.

Returns are still dropping in, and now exceed two hundred. They continue to be very acceptable, but I judged it best to content myself with the number received up to a date when I could conveniently work at them, and to publish preliminary results without longer delay. The total number of returns received up to the date in question, that contained one or more noteworthy kinsfolk, was 110.

Subjoined are classified lists of the qualifications that were considered by one or other of the 110 correspondents as warrants of noteworthiness. I attached to each of these more or less noteworthy kinsmen (for my own private use in this inquiry) a *, a +, a -, or a o, signifying respectively 3, 2, 1, or no marks. In doing this, account was taken of honours, of biographical notices, and of the context of the communication, which often helped in deciding cases. Only one of these symbols was allotted to each individual.

A List.—Mostly recipients either of a * or a +.

Ministers of State, Heads of Departments, Permanent Secretaries, and other high posts in public offices. Member of Parliament, but subject to reservation.

Foreign Ambassador or Minister, Consul General, Secretary of Legation.

Governor of a Colony, Colonial Secretary, high Colonial Office.

Admiral or General in important command, high Staff appointments.

Clerical dignitaries, eminent ministers, philanthropists.

Legal dignitaries at home and in the colonies.

Medical men of distinction.

Professors in great universities, heads of the more important colleges and schools. University scholarships, first or second place in class lists of universities or in competitive examinations for Woolwich, Indian Civil, or principal home services.

Distinction in any form of Art—as poet, musician, singer; architect

sculptor; painter, engraver, caricaturist; actor.

President or secretary of great institutions connected with science,

literature, art, or purposes of public utility.

Authorship of a standard work, editorship of an important journal, author-

ship of valuable memoirs.

Inventor in any branch, scientific traveller.

Founder of a great business, management of great commercial undertakings,

pioneer of a new industry.

B List.—Useful to corroborate and to check.

Honours:—From the Crown—as knighthood and all superior orders. From public bodies—as honorary university degrees, Fellowship of Royal Society (all F.R.S. were granted a *), of Royal Academy, and other selected associations.

Biographical notices—as in Dictionary of National Biography and in other standard collections. Obituary and other notices in the journals of literary and scientific societies. Special memoirs. Men of the time; Who's Who?

C List.—Personal estimates taken into account.

Prominent county man. Active in public affairs, successful in business. Forward in civic matters. Good professional position. Of high repute as a scholar, &c.

D List.—Referring wholly to women.

A social leader. Great force of character. Reputed very clever. Artistic (in any way) to an exceptional degree. Successful work in educational, civic and philanthropic matters was also taken into account. Brilliant prize winnings at school or college. The following are examples of the more suggestive returns (but slightly modified). "I have no hesitation in judging her to be 'noteworthy.'" "Acquisitive mind of a high order." "Learned both Greek and Hebrew unassisted." "Had a great and recognised influence in forming the character of her (distinguished) sons." "Helped her husband greatly in his (standard) work."

E List.—Referring to youths only, and reaching at most the qualification of —

Good place in examinations, though lower than the very high ones mentioned above. School scholarships and exhibitions of fair importance.

Much less difficulty was experienced in assigning marks than had been anticipated. The totals of the number given were 183 of *, 188 of +, 83 of —.

The 183 * included 23 fellows of the Royal Society. Brothers were only counted once.

Abbreviations used in the schedule are employed here also, to distinguish different kinds of kinship that bear the same popular names, as uncles and first cousins. They are convenient, and seem to have been easily understood. They were first suggested by me in NATURE of January 28 of this year:—bro=brother; da=daughter; fa=father; Hu=husband; me=mother; si=sister; so or son=son; Wi=wife. fa bro son means "MY father's brother's son IS"; me da means "MY mother's daughter IS"; so Wi bro means "MY son's wife's brother IS," &c.

The total amount of marks that were thus assigned to each grade of kinship are given in Table I. For example, out of the 110 fa fa fa of the 110 senders, 3 were allotted a *, 1 a +, and none a —. Out of the 110 fa the corresponding numbers were 27, 25, 5.

TABLE I.—Distribution of Symbols and of Indices of Success among the Kinsfolk of the 110 Senders.

| Kinship | | | Symbols * + - 2 1 | Indices of success | Kinship | | | Symbols * + - 3 2 1 | Indices of success | | |
|------------------|-----|---------|-------------------------|--------------------------|---------|-----------------|-----|---------------------------|--------------------------|-------|----|
| Half brothers | fa | fa | fa | 2 1 — | 11 | me | fa | fa | 2 1 — | 5 | |
| | fa | fa | bro | 8 1 — | 26 | me | fa | bro | 3 1 — | 11 | |
| | fa | me | bro | 1 — — | 3 | me | me | bro | 1 1 — | 5 | |
| | fa | fa | | 16 5 3 | 67 | me | me | fa | 13 8 3 | 58 | |
| | fa | bro | | 11 15 3 | 66 | me | me | bro | 11 14 3 | 64 | |
| | fa | si | | 1 4 1 | 19 | me | si | | 4 1 1 | 9 | |
| | fa | me | | — 1 3 | 5 | me | me | | 1 3 1 | 10 | |
| | fa | | | 27 25 5 | 136 | me | me | | 4 4 4 | 24 | |
| | bro | | | 37 21 17 | 170 | si | | | 3 6 5 | 26 | |
| | fa | son | | 3 3 — | 15 | Half sisters | fa | da | — — — | — | |
| | me | son | | — — — | — | | me | da | — — — | — | |
| | bro | son | | 4 11 2 | 26 | | si | son | | 2 4 1 | 12 |
| | bro | da | | — 2 — | 4 | | si | da | | 1 1 1 | 6 |
| | fa | bro son | | 10 7 1 | 45 | | me | bro son | | 9 9 2 | 46 |
| fa | bro | da | — — 1 | 1 | me | bro | da | | 1 1 — | 5 | |
| fa | si | son | 5 3 4 | 25 | me | si | son | | 6 5 3 | 31 | |
| fa | si | da | — 2 1 | 5 | me | si | da | | — — — | — | |
| | si | son | 1 16 14 | 49 | | me | da | | — 6 5 | 17 | |

Total 183 of *, 188 of +, 83 of —.

Examples:—the index for fa fa fa is equal to 3 multiplied into 3, plus 2 multiplied into 1, plus 2, =11; that for si son is equal to (1×3, +4×2, +1×1)=3+8+1=12.

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Tables II. and III. are based on Table I.

TABLE II.—Successes of Kinsmen of Fellows of the Royal Society.

| A.—Through Male lines. | | B.—Through Female lines. | |
|------------------------|--------------------|--------------------------|--------------------|
| Kinship | Index of successes | Kinship | Index of successes |
| fa fa bro | 26 | me me bro | 5 |
| fa bro son | 45 | me si son | 31 |
| fa fa | 97 | me fa | 58 |
| fa bro | 66 | me bro | 64 |
| | 304 | | 158 |

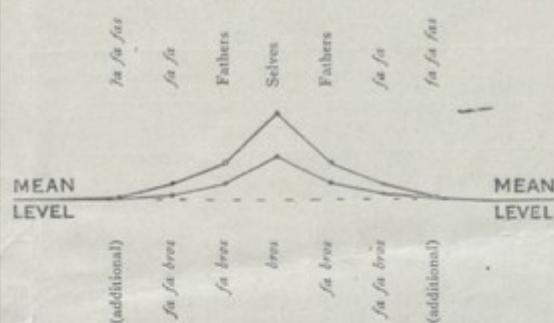
A popular notion that ability is mainly transmitted through female lines is more than contradicted by these figures.

The families of the fellows of the Royal Society must be fertile, because the number of brothers, whether of selves or of fathers, came out closely as 2.43. I will not now pursue the analysis, as the other kinds of kinship are hardly numerous enough in the present collection to justify conclusions.

TABLE III.—Indices of Success among near Kinsmen in Ascending Generations of the 110 Contributors.

| 110 persons in each class | | | | Brothers of 110 persons in each class | | |
|---------------------------|----------|------------------|------------------|---------------------------------------|------------------|------------------|
| Generation | Kinship | Observed indices | Accepted indices | Kinship | Observed indices | Accepted indices |
| I. | Selves | 330 | 330 | Brothers | 170 | 170 |
| II. | fathers | 136 | 136 | fa bro | 66 | 65 |
| | | | | me bro | 64 | |
| III. | fa fa | 67 | 62 | fa fa bro | 26 | 16 |
| | me fa | 58 | | me me bro | 5 | |
| Additional | fa fa fa | 11 | | fa me bro | 3 | |
| | | | | me me bro | 5 | |

Distribution of Success in the Families of Successful Men (from Table III.)



The upper line of the diagram indicates the successes of direct male ancestors, the lower line those of their brothers. The mean level of the community was inferred from the fact that it cannot be higher than the lowest entries in Table III., so far as these are to be trusted, and that these would be of barely perceptible magnitude in the small diagram.

Relation of Success to Natural Ability.—The success of

a man is wholly due to the combined effect of Natural Gifts and of Circumstances. More, however, being included under the title of natural gifts than can influence success, this part may be disregarded. The remainder comprises intellectual power, appropriate tastes, a persevering disposition, and much else, forming a large group which will be briefly termed "Natural Ability." The Circumstances, so far as they affect success, include healthy rearing, family and social influences, education, money, leisure, and surroundings that encourage work or idleness.

Men whose histories are known can be sorted with rough fairness, and with little difficulty, into three grades of natural ability, one-third of the whole number being classed as "above mediocrity" and marked +1, another third being classed as "mediocre" and marked 0, the remaining third being classed as "below mediocrity" and marked -1. After this has been done and the results recorded, the same men may be sorted afresh and independently into three grades, according to their Circumstances, one-third of them consisting of those whose circumstances conduced to success and are marked +1, the other thirds being respectively marked 0 and -1 on the principle already explained. Assuming for the moment (the question will be discussed later on), first, that Natural Ability and Circumstance are independent, and, secondly, that the mark for Success will always be equal to the sum of those for Ability and Circumstance, then the relation of Success to Ability is easily found. A square table (Table IV.) is made with three columns and three horizontal bands; it consequently contains nine compartments. The "arguments" at the head of the several columns will be +1, 0, -1; so will be those that precede the several bands. Then an entry is made in each compartment equal to the sum of its two arguments. The next step is to sort the successes in order of their values, annexing to each the various grades of ability that have been associated with it, and to enter the averages of them at the side as in Table V.

TABLE IV.—Distribution of Successes, under the assumption that each differs little from that of the sum of its two variable constituents, and that these vary independently.

| Circumstance | Natural ability | | |
|--------------|-----------------|----|----|
| | +1 | 0 | -1 |
| +1 | +2 | +1 | 0 |
| 0 | +1 | 0 | -1 |
| -1 | 0 | -1 | -2 |

The entries in the body of the table represent the Successes. Each is the sum of its two arguments, which refer respectively to Natural Ability and to Circumstance.

TABLE V.—(Extracted from Table IV.)

| Grades of success | Associated grades of natural ability | | | |
|-------------------|--------------------------------------|----|----|----------------|
| | All of the observed values | | | Average values |
| +2 | +1 | — | — | +1 |
| +1 | 0 | +1 | — | $+\frac{1}{2}$ |
| 0 | -1 | 0 | +1 | 0 |
| -1 | -1 | 0 | — | $-\frac{1}{2}$ |
| -2 | -1 | — | — | -1 |

The result is that the average quantity of exceptional ability which is associated with any given amount of exceptional success is exactly its half. This same conclusion is reached by an *a priori* argument. Thus, let S, A, C be three independent variables, and $S = \frac{1}{2}(A+C)$. Then if C be unknown, its average value will be mediocrity, that is, =0. Consequently S will on the average be associated with $\frac{1}{2}(A+0)$, that is, with $\frac{1}{2}A$. There is a uniform rate of regression towards mediocrity. The same will take

place if the cases are sorted in such proportions that the mediocrities shall be twice as numerous as either of the extreme groups. The table will then have four columns and four bands, with the arguments +1, 0, 0, -1, and it will have sixteen compartments. The result will still be the same if the mediocrities should be thrice as numerous as either of the extreme groups, and so on.

The two assumptions that have been made with the purpose of giving a rough idea of what would really occur must now be justified so far as may be. The first assumption was that natural ability and circumstance may be treated as independent variables. This position would be indefensible if we were making a precise analysis, because the two are certainly correlated to some extent. Thus a bright attractive boy receives more favour, and thereby has more opportunities of getting on in life, than a dull and unpleasing one, but these advantages are not unmixed with drawbacks; attractiveness leads to social distractions, such as have ruined many promising careers. The amusing couplet of Henry Taylor is worth quoting:—"Me, God's mercy spared, from social snares with ease Saved by the gracious gift, ineptitude to please." Another instance of correlation is that the disposition to intellectual effort being heritable, a naturally studious boy is frequently brought up in a family whose influence and opportunities develop his natural bent; similarly as to natural scapegraces. But my returns here and elsewhere show that home influences are much less potent than might be supposed. Many correspondents speak of themselves as the only members of their family who had tastes like their own, and kinsfolk win distinction in many different directions. Moreover, a reaction against the monotony of home influences is often shown by those strong characters whose tastes are not in complete harmony with them. The correlation between natural aptitude and the circumstances favourable to success is consequently less strict than appears at first sight, and to the best of my judgment is not worth regarding in a rough inquiry.

The other assumption was that success is equal to the simple sum of natural ability and favouring circumstance. On the contrary, it must be some highly complex and discontinuous function of it. Still, the fact remains that a gifted child is more likely to succeed under conditions that are on the whole favourable to success than otherwise. The obvious objection that circumstances favourable to the development of one class of mind may be prejudicial to that of another is met by supposing a preliminary grouping of the men according to their dominant tendencies, scientific, scholastic, artistic, devotional, militant, and so forth, and treating these groups separately, each with its appropriate classification of circumstance. Little more is asked for than that natural ability and circumstance, as reasonably interpreted, shall be considered cumulative, in a broad and general sense, in their power of leading to success. It follows from this that any "exceptionality" of natural ability will, on the average, be roughly proportional but inferior to the exceptionality of the accompanying success. Also that the two will agree in direction, good ability going with high success, poor ability with the reverse. Rare exceptions do not invalidate general conclusions, any more than the fact of one boy in a class of schoolmates dying very early or very late invalidates the expectation of life at school ages as calculated by actuaries.

Exceptionally Gifted Families.—The diagram would assure us, even if we had no other grounds for assurance, that exceptionally gifted families must exist, whose race is a valuable asset to the nation. A few of these have been indicated by the present returns; they well deserve, and will probably receive, a full description hereafter. It must suffice for the present to mention the existence of at least nine gifted families connected with fellows of the Royal Society, two or three of whom are exceptionally gifted. I will conclude with the remark that the experience gained through this inquiry has strongly confirmed an opinion expressed in my lecture on Eugenics before the Sociological Society, of which an abstract appeared in these columns (vol. lxx. p. 82), namely, that it would be both feasible and advantageous to make a register of gifted families. I have now better hope of being able to carry some such design into effect.

FRANCIS GALTON.

The author decides in favour of a rotation period for both Mercury and Venus approximating to that of the earth. He gives an excellent *résumé* of Prof. Poynting's investigations of temperature. He obtains for Mercury 193° C., for Venus 66° C., and for the earth, by the same method, 16° C. This last result inspires some confidence in the two former. M. André decides against the canals of Mars. It is one of the many evidences of the up-to-date character of the book that reference is made to the experiments by Mr. Maunder and Mr. Evans on this question with the help of the boys of the Royal Hospital School at Greenwich.

The chapter on minor planets is excellent. M. Mascart has, however, recently covered the same ground. The present volume contains a reference to 1906 TG. The chapters on Uranus and Neptune consist for the most part of what is now ancient history. The author considers that planets inside Mercury or outside Neptune would have been already discovered if they existed.

In the second part the author gives a historical account of various announcements of a satellite of Venus. His chapter on the satellites of Mars, and the first half of the following chapter, is necessarily somewhat hackneyed. The latter chapter concludes with Mr. Melotte's discovery of Jupiter's eighth satellite and Mr. Crommelin's announcement that the orbit was retrograde (*fait absolument inattendu*). Mr. Crommelin's original period of three years and a half, based on the supposition of a circular orbit, enables one to date the writing of this paragraph to within a month or two.

The interest of the next chapter centres on Phœbe and the still unconfirmed tenth satellite. The last chapter of the second part refers to the masses of the planets and their satellites.

The third part, on the formation of the planetary system, describes Laplace's nebular hypothesis and its subsequent extensions and modifications by Roche, Darwin, Faye, and Stratton. On p. 239, in four short paragraphs, we have a statement of the case against Laplace's hypothesis. In these paragraphs the retrograde motion of Jupiter's eighth satellite is again mentioned.

The Care of Natural Monuments, with Special Reference to Great Britain and Germany. By Prof. H. Conwentz. Pp. xi+185; illustrated. (Cambridge: University Press, 1909.) Price 2s. 6d. net.

THE title of this little work scarcely gives a sufficient clue to the nature of its contents, as there are comparatively few persons who would regard wild mammals or wild birds as "natural monuments." As he tells us in the introduction, the author has himself felt this difficulty, but has nevertheless used the term as a translation of the German "Naturdenkmal"; though we fear this rendering may result in checking the sale of an excellent and praise-worthy volume. Prof. Conwentz writes as one having authority, since he is the Prussian Government commissioner for the care of natural monuments. On this subject he delivered an address at the Leicester meeting of the British Association in 1907; and it is that lecture which forms the groundwork of the book now before us. The book is divided into two sections—"Nature Threatened" and "Nature Protected"—the former particularising the various natural objects and types of scenery which require protection, and the latter what has been and is being done in this direction in different countries, but more especially in the United Kingdom and Germany. On the whole, the author appears to consider that we are doing our duty as regards the protection of the indigenous fauna

fairly well, and bestows unstinted commendation on the action of local authorities in establishing reservations in various parts of the country. He is, however, of opinion that more attention might be devoted to securing small areas as reserves of this nature; and as regards other "natural monuments" suggests that private landowners might be induced to do more in the way of conservation than is at present the case. It is also suggested that the central committee for the study and survey of British vegetation might include in its programme the protection of characteristic associations of plants, as well as of single rare species. By directing attention to what has been done and what remains to be done, the appearance of the volume will doubtless serve to awaken renewed interest in the subject. R. L.

The Mineral Kingdom. By Prof. R. Brauns. Translated, with additions, by L. J. Spencer. With 91 plates (73 of which are coloured). (Stuttgart: Fritz Lehmann; London: Williams and Norgate, 1908.) Parts i. to v., price 2s. net each.

WHILE popular introductions to botany and zoology are numerous and find a ready sale, little has been done to familiarise the general public with the appearance and characters of the commoner minerals. The chief obstacle has been found in the difficulty of depicting the colour and lustre of minerals so accurately that they may be recognised without the employment of the ordinary methods of determination.

To judge by the five parts which have already appeared an unusually successful attempt has been made in the present work to solve the problem of the representation of minerals by colour printing. The reproductions of topaz, tourmaline, and phosgenite are excellent, and even minerals with metallic lustre are in most cases very effectively rendered. The plates measure $9\frac{1}{2}$ inches by $6\frac{1}{2}$ inches, and, as a rule, contain numerous coloured figures.

The book can be recommended to all who wish to take up the study of mineralogy, and have not the opportunity of referring to a collection containing as many examples as those illustrated in these plates.

The text is clear and readable, and comprises a simple introduction to the principles and methods of the science, as well as a detailed account of the different mineral species. J. W. E.

Man in the Light of Evolution. By Dr. J. M. Tyler. Pp. xiv+231. (London: Appleton and Co., 1909.) Price 6s. net.

THIS is the sort of book about which there is no need to say anything harsh. It is calculated to produce a vague edification in the mind of the unscientific reader. Prof. Tyler's attitude towards disputed problems of evolutionary science is so conciliatory and non-committal that one fails, for instance, to discover what view he holds about the inheritance of acquired characteristics, or whether he has any view of his own. He alludes in a distant way, but always politely, to Mr. Darwin, Mr. Haeckel, and so on. (But why is poor Mr. A. J. Balfour "Balfour"?) So far as he has any point to make, it would seem to be this, that the springs of progress lie not so much in the environment as in our own "higher powers," and that these "higher powers" consist especially in our moral and religious tendencies. All this may be quite true; but it cannot be said that our author helps in the slightest degree towards a clear understanding either of what those are or of how they have come about. A perfectly worthless bibliography is appended, in which the name of J. M. Tyler appears more than once, but that of E. B. Tylor not at all.

An Explanation of the Adjustment of Ships' Compasses. By Commander L. W. P. Chetwynd, R.N. Pp. 24. (London: J. D. Potter, 1909.) Price 2s.

THIS useful little book, the sections of which are accompanied by diagrams, is an endeavour on the part of the author to convey to the reader in as concise a manner as possible the various causes of deviation, and the methods of overcoming them, without the use of mathematical formulæ.

In most treatises dealing with this subject it is, unfortunately, the case that they are too theoretical and contain too many symbols to suit the average seaman; therefore great praise is due to Commander Chetwynd for the able manner in which he has brought out a practical book for practical people. H. C. I.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

An Inquiry concerning Scientific and Medical Journals.

CAN any of your readers kindly inform me where copies of the following journals can be found in England, if possible in London?

(a) *Lo Spallanzani*. This is a journal of the medical and natural sciences published at Modena in the 'seventies and 'eighties.

(b) *Mittheilungen d. Wiener embryol. Institut*. Published in the 'eighties, and perhaps still.

(c) *Gazette médicale d'Algérie*. Published at Algiers in the 'fifties.

(d) *Ann. Soc. méd. d'Émulation de la Flandre occid.* Roulers, 1849. There are other references to a *Soc. méd. d'Émulation*, without place or name. I should be very glad to have these *Soc. méd. d'Émulation* cleared up, as there must, I think, have been several such societies.

(e) *Baltimore Sun*, 1876. The stock of this journal was burnt. Is there a file of it anywhere in England?

(f) *Archiv de méd. nav.* Published at Paris in the 'seventies.

(g) *Archiv f. Psych. u. Nervenkrankheiten*, for the 'eighties.

(h) *Sociedad medica Argentina*, 1901.

(i) *International Med. Magazine*. Philadelphia, 1892.

(j) *Zeitschrift f. Tiermedizin*, 1897. (Sought at Royal Veterinary College.)

(k) *Soc. med. Württemberg*, 1905.

These have been sought for at the likely places, but it is possible that they exist and have been overlooked. It is a pity that some of the larger libraries in London duplicate certain of the rarer scientific and medical journals, whereas by a division of material they might provide a more comprehensive collection. Further, there ought to be at least one library in London with a complete set of university dissertations and degree theses. No library at present appears to make a speciality of such material. I have always found German university librarians most willing to lend copies, but the delay is vexatious, and a cursory examination of five minutes' duration would often have settled the point required. KARL PEARSON.

Biometric Laboratory, University College, London.

Radio-activity in Relation to Morozoff's Theory of the Constitution of Atoms.

THE fact that the α particles of radium, as shown lately by Prof. Rutherford and Geiger,¹ carry two elementary charges of positive electricity, $2 \times 4.65 \times 10^{-10}$ E.S.U. per atom of helium, appears quite unexpected, and requires consideration. Since the atom of helium carries

¹ Proc. Roy. Soc., lxxx., 162 (1908), and *Physikalische Zeitschrift*, x., 42 (1909). Also NATURE, November 5, 1908.

more than a single charge, which would present the simplest and most natural contingency, there arises the question, Why does it carry just two charges and not one or more? an answer to which has been proposed by N. L. Müller in the "Jahrbuch der Radioaktivität" (v., 702, 1908), but it seems to me that the following explanation, based upon the Morozoff theory of the constitution of atoms,¹ will not be devoid of interest.

According to Morozoff, all the chemical elements are formed by manifold combinations of three primordial elements, viz. archonium (nebulium) (Z), with a combining weight 4; protohelium (x), with a combining weight 2; and protohydrogen (h), with a combining weight 1. Of these, protohelium, as shown by the value of its combining weight, presents half an atom of ordinary helium, the re-combination of two of which yields again a helium atom.

Archonium (Z), with its eight affinities, plays the part of carbon in organic compounds, the archonium elements, more or less saturated with protohelium (x) and protohydrogen (h), building the main atomic chain. The chains of various chemical elements are built of one to eleven such links, which, combined after certain rules, allow us to reconstitute the whole periodic system of elements.

As in the notation of organic chemistry, the atom of radium is represented in Morozoff's system by the following symbol:—

$$x - Z(x_2h) - [Z(xh)_6]_8 - (x_2h)Z - x.$$

Radio-activity is due to closing of the chain, accompanied by splitting off of two helium half-atoms (x),

$$Z(x_2h) - [Z(xh)_6]_8 - (x_2h)Z + 2x.$$

which yield the material carriers of electricity of the α particles.

Since both extreme helium half-atoms (x) are expelled under similar conditions, and since they carry electricity, each of them cannot carry less than one elementary charge of 4.65×10^{-10} E.S.U., hence a whole atom of helium must carry at least two elementary electric charges, or 9.3×10^{-10} E.S.U.

As not only radium, but also thorium and uranium, are represented by similar symbols, and their radio-activity is always accompanied by the expulsion of two helium half-atoms, it is evident that in all known radio-active changes an atom of expelled helium must carry at least two elementary charges. If we call, further, as has been done by Maxwell, an elementary charge an atom of electricity, we can consider the combination of two of them as a molecule of electricity, and state the following general law:—in all radio-active changes the smallest quantity of electricity associated with an atom of matter is not an atom (4.65×10^{-10}), but a molecule of electricity (9.3×10^{-10}). B. DE SZYSZKOWSKI.

Kieff, Zolotoworotska 6, Russia, April 16.

The Gravitative Strain upon the Moon.

IN his discourse on "The Æther of Space" at the Royal Institution, February 21, 1908 (abstracted in NATURE, vol. lxxix., p. 323), Sir Oliver J. Lodge states that "the force with which the moon is held in its orbit would be great enough to tear asunder a steel rod four hundred miles thick, with a tenacity of thirty tons per square inch," and he further states that Maxwell calculated the gravitational stress near the earth to be 3000 times that which the strongest steel could stand, and near the sun it should be 2500 times as strong as that.

For convenience we may call the diameters of the earth and of the moon 8000 and 2160 miles respectively, and the moon's distance from the earth 240,000 miles. At the surface of the earth the moon would fall 16.1 feet, or 1/328 mile, in one second. The velocity necessary to counteract this fall is, therefore, equal to $\sqrt{8000 \times 1/328}$, or about five miles per second, at which velocity the centrifugal force of the moon, revolving at a distance of

¹ Physical Review (Russian), ix., 73, 121 (1908).

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British Medical Jnl

9-4-10

HEREDITY AND ENVIRONMENT.

SIR,—Owing to what our psychical friends will doubtless consider some phase of thought reading, Miss Dendy has most effectively answered Dr. Potts at the very instant when he was assailing, not her, but Dr. Ashby's data. Having had both Dr. Ashby's and Dr. Potts's material before me, I have no doubt, as a statistician, as to what is the relative weight to be given to them. Birmingham schedules for somewhat less than 300 mentally defective children were for some time in my laboratory, and at my suggestion, because no mere statement of the percentage of alcoholism in the parents of mentally defectives is by itself of any value, a sample of normal children was investigated from the same environment. The parentage showed practically the same high percentage of alcoholism, and on my pointing this out, I was told that probably the whole district investigated consisted of a degenerate population. In the circumstances it was difficult to use the material for our investigations, because according to the recorders they now held the "normal sample" sent to me not to be a normal sample. The schedules could not be used for any other investigation, because from internal statistical tests, familiar to the statistician, they did not possess the degree of reliability which we consider essential to our work here.

I have refrained hitherto from criticizing Dr. Potts's conclusions as contributed to the Royal Commission on the Care and Control of the Feeble-minded, or in the *British Journal of Inebriety*, because my aim is not to attack inconclusive results, but to induce investigators to adopt better methods, and I believed that owing to a conversation I had with Dr. Potts, he saw the statistical fallacy of his methods and the defects of his material.

As he has chosen to attack the late Dr. Ashby's far more cautious and careful work, I have felt called upon to give at any rate one statistician's views on his Birmingham material.—I am, etc.,

Eugenics Laboratory, University College,
July 3rd.

KARL PEARSON.

Times

March 31st 1910

PRIMOGENITURE AND HEREDITY.

TO THE EDITOR OF THE TIMES.

Sir,—Surely Sir Henry Blake does not suppose that a man with any statistical training would overlook the point that the younger-born are more numerous than the eldest-born, and, therefore, any marked character is more likely to occur with a younger child? As one who has made several investigations with regard to this point, may I beg your space for a few words? I think there is no doubt that the first two children of a family are slightly more liable to certain defects than the later-born members. Of a hundred first-born, a hundred second-born, a hundred third-born, and so on individuals—independent of sex—the first two sets will have rather more, the third and other sets rather less, than the average percentages of tuberculosis, insanity, albinism, and criminality. The differences are very small, but they certainly exist; and I have tried the problem in many ways, to avoid the pitfalls so prevalent in statistics. For aught I can say the eldest-born may have more ability. I have not seen an adequate investigation of this point. On the other hand, the elder-born appear to have a slightly longer length of life. It is conceivable that the maternal novitiate may be the source of certain nervous troubles in the eldest-born; or, when we come to deal with the population as a whole, the eldest-born may more frequently be born when the parents are too young. I give no dogmatic explanation, but, for the characters mentioned, I think the fact is real.

The inheritance of ability is so marked that there is every reason to suppose that a man who has won his way by pure ability to the House of Lords will, if he has mated wisely, have children above the average in ability. Unfortunately, the House of Lords has too often been recruited by mere plutocrats, by political failures, or by men who have not taken the pains necessary to found or preserve an able stock. In such cases it is not the hereditary principle—that ability breeds ability—that is at fault, but the inflexibility of a rule which pays no attention to the application or non-application of the principle in the individual instance. There are families which generation by generation have produced statesmen, jurists, men of science, or members of the Executive. A study of their pedigrees shows the reason for this. I accordingly believe that the House of Lords wants rather more than less of the hereditary principle—where I understand by “principle” the application of the truth drawn from observation that, for good or bad, children, in a certain marked and measurable degree, resemble their parents.

The measure of such resemblance does not, as Mr. Montague Crackanthorpe appears to suggest in your issue of the 26th inst., depend upon any particular system of frequency, Gaussian or other, but solely on whether the occurrence of like characters in parent and offspring is or is not beyond the limits of independent probability.

I am your obedient servant,

KARL PEARSON.

Eugenics Laboratory, University College, March 29.

Charge of Arson.

At Exeter yesterday Charles Reynolds, managing director of the West of England Trading Company, was charged with maliciously setting fire to Round Tree Mills, Exeter, on March 9, with intent to defraud the North British and Mercantile Insurance Company. After a great deal of evidence had been adduced on behalf of the prosecution the hearing was adjourned till to-day. (p. 3)

The Gateshead Shooting Case.

At Gateshead yesterday an inquest was opened on the body of Thomas William Henderson, who was shot last Saturday in the presence of his wife. Mrs. Henderson gave evidence, and stated that a young man named Craig, to whom she had formerly been engaged, came to her house on Saturday, and fired three shots at her husband and two at her. The inquest was adjourned. (p. 3)

The South Norwood Robbery.

At Croydon yesterday three men named Franklin, Simpson, and Christie were committed for trial charged with robbing and attempting to murder Mr. W. Taunton at South Norwood on March 7. (p. 4)

Police Courts.

At Marylebone Edward Hearn was sentenced to a month's hard labour and Alfred Ward, 17, was fined 10s. for cruelty to two horses which Ward, when arrested, was leading along the Edgware-road, and which were stated to be very old and emaciated, and only fit to be destroyed. (p. 3)

Charge of Attempted Blackmail.

At Swansea yesterday W. Slingsby, a joiner, was committed for trial charged with sending to Miss Dulcie Morris, daughter of Sir Robert Morris, of Sketty Park, a letter demanding money with menaces. (p. 3)

The City.

Money continued in keen demand yesterday, and the Bank of England did a large business in loans; the discount rates were rather easier. Silver rose $1\frac{1}{16}$ d. per ounce. On the Stock Exchange the Settlement in securities other than Mining shares began; business was quiet at first, but increased in volume later, and prices left off higher as a rule in most departments. Consols rose $1\frac{1}{16}$ to $81\frac{1}{16}$ and $81\frac{1}{2}$. The Home Railway Market was very firm, especially in the afternoon closing with considerable advances. American securities were supported from New York. The stocks of the Mexican Railway rose sharply. Peruvian Corporation issues were appreciably higher. The South African Market opened dull, but became strong in the afternoon, especially for Rhodesian shares. Rubber issues continued to advance. On the Metal Exchange copper fell slightly; tin rose 20s. to 22s. 6d. At the Coal Exchange business was quiet, with a dull tone; selling prices to the public were reduced 2s. for most sorts. At the Baltic wheat was firm and occasionally dearer; in Mark-lane flour was unchanged. In the sugar market home refined was unaltered; foreign granulated and beet-root were easier. Indiarubber showed great strength, with prices 4d. to 5d. higher; fine hard Para for June-July delivery closed 11s. $4\frac{1}{2}$ d. (pp. 13 and 16)

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From **MORNING POST,**
346, Strand, W.C.

HEREDITY AND CRIME.

TO THE EDITOR OF THE MORNING POST.

SIR,—In my letter of October 21 I used the following words:

We must wait till we have the context of Dr. Donkin's lecture before we can fully understand the meaning he has given to the terms employed, or the evidence upon which he bases his statements, but meanwhile these statements will be taken as expressing facts drawn from the wide range of material especially accessible to a man in Dr. Donkin's official position.

I, in common with most readers, supposed that Dr. Donkin's statements would be supported by a mass of evidence, which the public did not possess, and which would effectively demonstrate the very dogmatic statements attributed to him. (He himself admits that these statements are dogmatic.—*Lancet*, p. 1,189.) His lecture has since been published (*Lancet*, October 22). It is a most brilliant piece of oratory, but I regret to say that from beginning to end there is no data whatever bearing on crime or heredity. It is a purely pre-Baconian discussion on the meaning which he attributes to words. There is not, from prologue to epilogue, any description of the method by which the orator would himself attack problems of this kind.

Dr. Donkin, in his letter to you, states that the Biometricians and Mendelians differ in their methods and their views. Of one point I am quite certain, that they are far more closely in sympathy with each other than with any third school of biologists who, Dr. Donkin tells us, "differ profoundly" from both on many important points. I feel quite certain that any trained Mendelian will agree with me when I say that any disquisition on heredity and crime to be serviceable to science must contain an adequate mass of data embracing the family history of criminals and the details of their environment, accompanied by a discussion of these results, whether by Mendelian or Biometric methods, if there be a difference, is immaterial. The main point is first, actual data. Of these data there are none in the whole of Dr. Donkin's brilliant disquisition. There does occur, however, a reference to data. It runs as follows:

These statements about criminals will appear to be dogmatic, but are, I think, capable of proof. I have reason for believing that the report of an extensive inquiry now nearing completion, which has been carried out by the medical officers of our convict prisons, will go far in itself towards their justification.—(*Lancet*, p. 1,189.)

I presumed this sentence to refer to special data in Dr. Donkin's possession. He now tells us that the data to which he refers are open to my inspection in my own laboratory. I know nothing of the final results to be deduced from such data. If I did I should not cite them, for any report on them I should consider as official, and any premature statement would be likely to prejudice the independent judgment of the inquirers. My reference to criminal statistics and heredity touches other material in my hands. But we here come to the kernel of the matter, which I consider a very serious one. Dr. Donkin bases his opinion as to the non-hereditary character of the criminal tendency, so far as actual data goes, on material which has not yet been fully investigated, and the results of which neither he, I think, nor I, I know, are acquainted with. I ask him very frankly to say whether he considers this pledging material, not yet fully investigated, to give a definite result is fair to those gentlemen who are giving their whole time and energy to its examination? Above all, whether he has appreciated the disheartening effect which such a statement by an official superior must make on men whom I am quite sure have come wholly unprejudiced to an extraordinarily difficult task?—Yours, &c.,

KARL PEARSON.

Biometric Laboratory, University College,
Nov. 2.

In F. Salters

112r

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From

THE TIMES,
Printing House Square, E.C.

HEREDITY AND CRIME.

TO THE EDITOR OF THE TIMES.

Sir,—In your exceedingly interesting leading article on "Eugenics and Pauperism" in *The Times* of to-day, the following words occur:—"The existence of families of habitual criminals, preying on the public in a somewhat similar manner, has long been known."

A recent pronouncement by a member of the Prison Commission, which naturally carries much weight, is of a precisely opposite nature. Now the question of whether the tendency to commit anti-social acts, leading ultimately to conflict with the laws of the country—i.e., to crime and conviction for crime—is or is not hereditary is of vital importance when we propose to modify our treatment of criminals. We have at present a new and active Home Secretary. May I suggest that one of the most valuable additions that could possibly be made to the Prison Department at the present time would be the appointment of a medical man with one or two assistants, whose special occupation should be tracing the family history (chiefly from police records) and the environmental conditions in early life of convicted criminals? We should soon have sufficient material on which a definite judgment might be based as to whether crime or the tendency to law-breaking is or is not hereditary.

I am, Sir, &c.,

KARL PEARSON.

Eugenics Laboratory, Nov. 7.

See in Catalogue

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From **TIMES,**
Playhouse Yard, E.C.

HEREDITY AND CRIME.

TO THE EDITOR OF THE TIMES.

Sir,—I have no desire to enter into a further controversy with Dr. Donkin. I can only say that I and many others have read his Harveian Oration as distinctly indicating that he considered the tendency to commit crime is non-hereditary. Even in a quite recent communication to the public Press he speaks of "the wholly vague hypothesis that law-breaking is hereditary." In his oration he uses the words:—"Law-breaking or criminality is no unity. There are no special qualities, physical or mental, common to all criminals." (The question is really whether law-breakers have excess or defect of very ordinary qualities!)

I am rejoiced to hear that he believes in "the existence of families of habitual criminals." But if he believes in such existence, will he state how we are to ascertain whether the habit is hereditary or traditional except by such an inquiry as I have indicated dealing with the family history and environment of convicted criminals?

I feel very strongly that this matter is of far greater public importance than any personal controversy between Dr. Donkin and myself. A knowledge on the hereditary or non-hereditary character of the tendency to commit anti-social acts must be antecedent to any profitable scheme of criminal reform.

Dr. Donkin is medical adviser to the Prison Commissioners, member of the Prisons Board, and Director of Convict Prisons, and he tells us, and presumably his views have weight with the Prison Commissioners, that he believes in the existence of families of habitual criminals. You, Sir, used that term in your leading article, as the context indicated, in the sense in which you were speaking of families of habitual paupers, i.e., the hereditary sense. When I suggest that the only method of ascertaining what "habit" is due to is an inquiry into the relative value of heredity and tradition by investigating the family history and past environment of criminals, Dr. Donkin tells us that such methods of solving a definite problem "would be fruitless, even if practicable." All I can say is that, if this opinion is the one which Dr. Donkin succeeds in impressing on the Prison Commissioners and on the Home Secretary, no real reform in the treatment of criminals is possible. We must have facts before we can effectively alter treatment.

Dr. Donkin may be as sceptical as he pleases about biometric or any other statistical methods, but no opinion on a problem of great social importance is of the least value unless it proceeds from an analysis of facts. All Dr. Donkin achieves in his letter to you is to discourage the collection of facts, similar to those we now possess with regard to paupers, inebriates, mental defectives, and the insane, and which sooner or later will have to be collected for criminals.

I am, Sir, &c.,

KARL PEARSON.

Biometric Laboratory, University College, Nov. 10.

Letters fr. various writers (not K.P.)

GALTON/2/13/1/5

f.1

| Subject | Paper | Date | Writer |
|--------------------------------|---------------------|--------------|-------------------------------------|
| Heredity & Crime | Times | 1910 Nov 8 | Douten |
| " | M. Post | " 2 | " |
| " | " | " 5 | " |
| " | " | " 11 | A. Reid |
| " | " | " 25 | " |
| Phrenology & Heredity | Times | 1910 Mar | H. Blake |
| Alcoholism & Efficiency | " | 1910 Aug 7 | Marshall 2 copies |
| " | Alliance News | " Aug 2 | " |
| Alcohol & Degeneracy | Times | 1911 Jan 16 | Horsley & Shute 2 copies |
| " | " | " " | V. Horsley |
| " | " | " " | V. " |
| Drunk & Degeneracy | D. Chron. | 1910 Oct | T.P. Whitaker 2 articles & a letter |
| Eugenics & Social Reform | Nation | 1910 Aug | C. Roden Buxton |
| " | " | " " | Eugenist: Alcohol Memoir |
| Alcoholism & Opposing Eugenics | Times | 1910 June 11 | Douten |
| " | " | " Dec. 28 | Whetham |
| Heredity & Tradition | " | 1910 June | Ray Lankester |
| The Hereditary Principle | Shelford & A. Knell | 1910 Mar | W. Wyse |

Mr F Galt 12

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From **TIMES,**
Playhouse Yard, E.C.

HEREDITY AND CRIME.

TO THE EDITOR OF THE TIMES.

Sir,—Will you permit me, as the person referred to in Professor Pearson's letter of to-day's date as a "member of the Prison Commission," to contradict categorically the statement that I have ever made a "pronouncement of a precisely opposite nature" to the sentence quoted by him from your leading article on "Eugenics and Pauperism" in your issue of the 7th inst. ? I have never denied, and do not deny, "the existence of families of habitual criminals." Such a denial is the only pronouncement of an opposite nature (to say nothing of the word "precisely") that can possibly be conceived.

The question, however, whether "crime" is "hereditary" is obviously a wholly different one. I have elsewhere and recently indicated my opinion that such methods of solving it as are proposed by Professor Pearson would be fruitless, even if practicable.

I am, Sir, yours, &c.,

London, Nov. 8.

H. B. DONKIN.

L. F. Galt

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From **MORNING POST,**
348, Strand, W.C.

HEREDITY AND CRIME.

TO THE EDITOR OF THE MORNING POST.

SIR,—Professor Pearson's letter to you of Wednesday's date consists of practically a reiteration of his contention that he either has proved or can prove his opinion that crime is hereditary. This opinion he distinctly implies in his letter of October 21, where he says that when I have studied certain observations already published and others to come, he thinks I shall see that crime is hereditary. He further states, incorrectly, that I base my own opinion—that "criminality or law-breaking" (for those are the words I used, not crime) is not hereditary—on certain data which have not been as yet fully investigated.

My opinion, as I stated in my previous letter, is that the hitherto prevalent presumption that "crime is hereditary" is erroneous, and that the observations referred to as carried out in convict prisons will go far towards negating the data hitherto relied on by criminologists who have widely promulgated this hypothesis. So far Professor Pearson has, I believe, not claimed to prove from published data that criminality is hereditary, or even that any tendency towards a particular course of criminal action is hereditary. *De non apparentibus et non existentibus eadem est ratio.* He is, therefore, at present, in a somewhat similar boat to that in which he conceives me to be. Believing, as I do, rightly or wrongly, that the difference between Professor Pearson and myself is a question of method, and that this particular inquiry concerning "criminality" involves other issues, and cannot be carried out satisfactorily by the methods he adopts, it is clear, as I have said before, that a full newspaper discussion on the real point at issue would be inappropriate. In view of this position, it is irrelevant to demand from me statistical data to disprove the wholly vague hypothesis that law-breaking is hereditary. Further, when Professor Pearson asks me to say whether I consider that my "pledging of material, not yet fully investigated, to give a definite result" is a fair procedure, he adopts not only a pre-Baconian, but also an older and pre-Christian method of dispute: for his question is exactly parallel to that of the ancient Sophist: "When did you leave off beating your father?" and equally impossible to answer categorically. I maintain only that a certain class of observations made during this investigation go far to negative conclusions from other observations which have been long known and very widely accepted by unscientific persons.

I find it difficult to understand how Professor Pearson could have "presumed" that my original and explicit allusion to the "inquiry carried out in convict prisons" could possibly refer to any other data than those of which he is himself cognisant. But, be this as it may, it is only his own distorted version of what I said in this context that could give any colour at all to that interrogatory suggestion at the end of his last letter which he regards as the "kernel of the matter." I am sure that those gentlemen whose "official superior" he very inappropriately calls me will not endorse this application of Professor Pearson's "gentle art" of controversy.—Yours,
H. B. DONKIN.

London, Nov. 4.

f. 7x
F Galton

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From

THE TIMES,
Printing House Square, E.C.

29 MAR 1911

PRIMOGENITURE AND HEREDITY.

TO THE EDITOR OF THE TIMES.

Sir,—Sir Francis Galton's interesting observation on primogeniture leaves an important point somewhat obscure. Are we to understand that the relative superiority of natural gifts has been calculated on a basis of proportion? There is but one eldest born in a family. There may be several younger born. Again, are both sexes included? The eldest son may be a very junior member of a family.

Your obedient servant,

HENRY A. BLAKE.

Myrtle Grove, Youghal, Ireland, March 22.

Lw J. Galt

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From *Junio*

ALCOHOLISM AND EFFICIENCY.

TO THE EDITOR OF THE TIMES.

Sir,—Professor Pearson has made no attempt to answer my objections to the methods of the recent memoir of the Francis Galton Laboratory, which was stated by Dr. Donkin in your issue of May 31 to "show that parental intemperance has no causal relation to filial degeneration." The matter is of far-reaching importance: but I should not have turned aside from my proper work to discuss it if I had been aware that the July number of the *Statistical Journal* would contain a study by Mr. J. M. Keynes of the relations of the memoir to the original report of the Edinburgh Charity Organization Society, on which it is largely based. He has kindly let me see a proof of his paper: he goes deeper than I am attempting to do, and seems to me to prove conclusively that the use made of the report in the memoir is open to grave objection. I venture to hope that it will be considered carefully by those interested in eugenics.

The Edinburgh report, which I have now seen, is of marvellous excellence, and I should like, with your leave, to say a few words more suggested by it. I will trespass as little as may be on the ground occupied by Mr. Keynes.

I will, first, put in another way the central argument of my last letter. Suppose some one to collect statistics of the marks obtained by boys of 14 and 16 years old respectively in the same form, and, finding them to be about equal, to claim to have proved that boys of 16 are not more intelligent than boys of 14. I should say that his conclusion had no value except in relation to that form, and that it was "practically embodied in his choice of data." That is the charge which I have brought against the memoir. Alcoholics and non-alcoholics living in the same low class of houses and under similar low social conditions are likely to have about the same income, because the inefficiency of some alcoholics causes them to live in a low neighbourhood, just as the lack of intelligence of some boys of 16 causes them to be kept in a low form.

We are told in the Edinburgh report, though not in the memoir, that of the 781 families investigated 425 were "drunken," in 63 "drink was suspected," and 488 were known to be in receipt of charitable relief. The average weekly wage of the father is stated in the memoir (but not in the report) to be 25s. for alcoholics and 25s. for sober. Professor Pearson now says that "where there was a difference between the trade wages and the average wages actually received, the latter were used"; but here he must be referring only to the comparatively few cases in which the report gives specific information on the subject. For the rest, it seems that a guess was made; and that the figure, which is the corner-stone of the main argument of the memoir as regards efficiency, does not represent an ascertained fact, but contains a large element of conjecture.

In many cases large contributions to the total income are made by other members of the family. I have examined rather more than 100 cases taken at random, and find the average to be about 4s.; I will suppose the general average to be 3s. 6d. That brings up the steady family income on Professor Pearson's basis to about 28s. Now Mr. Charles Booth puts the equivalent of a regular weekly 21s. as the upper limit of the family income of the poorest million of the population of London; and so far as I know the general drift of official and unofficial studies of town life is consistent with his result. Bearing in mind, then, the above statistics as to alcoholism and pauperization, I suspect that if proper allowance had been made for the irregularity of the work of the drunkards, the ground would have been cut from under the argument in the memoir that drunkenness does little to lower efficiency.

I am, Sir, yours faithfully,

ALFRED MARSHALL.

Lt. & Buller

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From *Alliance News*

11-8 1910

ALCOHOLISM AND EFFICIENCY. LETTER FROM MR. ALFRED MARSHALL.

To the Editor of "The Times," August 2nd.

SIR,—Professor Pearson has made no attempt to answer my objections to the methods of the recent memoir of the Francis Galton Laboratory, which was stated by Dr. Donkin, in your issue of May 31st, to "show that parental intemperance has no causal relation to filial degeneration." The matter is of far-reaching importance; but I should not have turned aside from my proper work to discuss it if I had been aware that the July number of the "Statistical Journal" would contain a study by Mr. J. M. Keynes of the relations of the memoir to the original report of the Edinburgh Charity Organisation Society, on which it is largely based. He had kindly let me see a proof of his paper; he goes deeper than I am attempting to do, and seems to me to prove conclusively that the use made of the report in the memoir is open to grave objection. I venture to hope that it will be considered carefully by those interested in eugenics.

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ALFRED MARSHALL.

1-3

612r

Sir F. Salt

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From

THE TIMES,

Printing House Square, E.C.

12.1.1916

ALCOHOL AND DEGENERACY.

TO THE EDITOR OF THE TIMES.

Sir,—Your leading article on "Parental Alcoholism" in to-day's issue marks, we believe, a departure from the traditions of British journalism. You publish a grave indictment of our paper which appears in the *British Medical Journal* of to-morrow, but not that paper itself, nor even its formulated proofs or briefly stated conclusions.

Your readers, therefore, have no opportunity of forming their own judgment on scientific methods in the investigation of parental alcoholism nor of the injustice of your personal attack upon us.

In our paper we show:—

1. That Miss Elderton and Professor Pearson claimed for their memoir complete statistical and mathematical accuracy, accusing at the same time, though without discussing their investigations, all previous workers in this field of "bias," "of wilfully publishing false statistics," &c.
 2. That they had no knowledge whether the parental alcoholism, the effects of which they professed to study, began before the birth of the children or not.
 3. That they committed the biological error of having no "controls," and that, in fact, their "non-alcoholic" class did not exist.
 4. That their class of "teetotal parents" did not exist, and that their separate tabulation of children as offspring of "teetotalers" was unjustifiable, even on their own showing.
 5. That their conclusions, because of the complete confusion of their statistics, were necessarily as inconclusive as erroneous.
 6. That their explanation of the well-known higher death-rate of the children of alcoholic parents, as being due to accidents rather than to the toxic consequences of alcoholism, was not only purely hypothetical but also erroneous.
 7. That their chief generalization, namely, that the "wage-earning capacity," "mentality," and "physique" of the drinking parent was equal to, or rather better than, those of the sober parent, was not true, because their statistics were erroneous.
- That in sum (to quote the conclusions of our paper) they only arrived at their generalization by three erroneous methods:—

- i. Disregarding the facts and precautions against error published and provided by the Edinburgh Committee (upon whose data their memoir was founded).
- ii. Imagining and publishing statistical data where none exist in reality.
- iii. Disregarding the discrepancies between the conclusions arrived at by themselves.

All these conclusions we have proved in our paper in the *British Medical Journal* by several pages of facts and figures.

In your leading article you speak of our terms as amounting to "an accusation which, unless it be thoroughly substantiated, is always liable to recoil upon those by whom it is advanced."

If this was your opinion, we submit that you should have published at the same time our "substantiation," set out at full length in our paper, which you criticize but do not show to the readers of *The Times*.

Yours faithfully,

MARY D. STURGE.
VICTOR HORSLEY.

January 13.

C.B.r

TO THE EDITOR OF THE TIMES.

Sir,—Professor Pearson's short letter contains three points characteristic of his methods.

1. Avoidance of the issue. Although he impugned (in a letter published by you on the 12th) my use of the word "drunken," he does not reply to my quotations from his own writings, but drops the subject without apologizing.

2. Concealment of truth by raising a side issue.

"What the controversy is about" is the memoir published by Miss Elderton and himself last May, and continually criticized since then by Professor Alfred Marshall, Mr. Keynes, Dr. Sullivan, Dr. Saleeby, Sir Thomas Whitaker, M.P., Professor Sims-Woodhead, Dr. Basil Price, Dr. Claude Taylor, Dr. Mary Sturge, Sir Alfred Pearce Gould, Dr. Eder, and myself. Those of your readers who wish to know more must compare the memoir with the original report of the Social Investigation Committee of the Edinburgh Charity Organization Society, on which it was professedly based.

3. Inaccuracy. The title of the little book written by Dr. Mary Sturge and myself for school teachers is not what he represents it to be—namely, "Alcoholism (*sic*) and the Human Body"—but

"Alcohol and the Human Body, an introduction to the Study of the Subject, and a Contribution to National Health."

The difference is worth noting.

Yours faithfully,

January 14.

VICTOR HORSLEY.

614r

L. J. Gatter

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From

THE TIMES,
Printing House Square, E.C.

18 4/8 1511

SIR VICTOR HORSLEY AND THE GALTON LABORATORY.

TO THE EDITOR OF THE TIMES.

Sir,—Professor Pearson objects to the use in your abbreviated report of the phrase "drunken workman." He attempts to restrict the term "drunken" to mean only "a person in the state of drunkenness," that is, a person in the helpless condition of acute alcoholic poisoning and therefore continuously unable to work.

Miss Elderton and Professor Pearson describe the class of workmen I referred to as "intemperate" "drinkers" and "drinking parents," saying of them on page 3 of their paper:—"We believe that many, possibly the majority, of our drinking class (*sic*) would be found to suffer more or less from chronic alcoholism."

I leave it to your readers to judge whether such persons are not appropriately described by the common expression "drunken workman."

A detailed criticism of Miss Elderton's and Professor Pearson's use of terms and "higher" mathematics in the study of this subject will appear this week in the *British Medical Journal* by Dr. Mary Sturge and myself.

Yours faithfully,

VICTOR HORSLEY.

ALCOHOL AND DEGENERACY.

TO THE EDITOR OF THE TIMES.

Sir,—Your leading article on "Parental Alcoholism" in to-day's issue marks, we believe, a departure from the traditions of British journalism. You publish a grave indictment of our paper which appears in the *British Medical Journal* of to-morrow, but not that paper itself, nor even its formulated proofs or briefly stated conclusions.

Your readers, therefore, have no opportunity of forming their own judgment on scientific methods in the investigation of parental alcoholism nor of the injustice of your personal attack upon us.

In our paper we show:—

1. That Miss Elderton and Professor Pearson claimed for their memoir complete statistical and mathematical accuracy, accusing at the same time, though without discussing their investigations, all previous workers in this field of "bias," "of wilfully publishing false statistics," &c.

2. That they had no knowledge whether the parental alcoholism, the effects of which they professed to study, began before the birth of the children or not.

3. That they committed the biological error of having no "controls," and that, in fact, their "non-alcoholic" class did not exist.

4. That their class of "teetotal parents" did not exist, and that their separate tabulation of children as offspring of "teetotalers" was unjustifiable, even on their own showing.

5. That their conclusions, because of the complete confusion of their statistics, were necessarily as inconclusive as erroneous.

6. That their explanation of the well-known higher death-rate of the children of alcoholic parents, as being due to accidents rather than to the toxic consequences of alcoholism, was not only purely hypothetical but also erroneous.

7. That their chief generalization, namely, that the "wage-earning capacity," "mentality," and "physique" of the drinking parent was equal to, or rather better than, those of the sober parent, was not true, because their statistics were erroneous.

That in sum (to quote the conclusions of our paper) they only arrived at their generalization by three erroneous methods:—

i. Disregarding the facts and precautions against error published and provided by the Edinburgh Committee (upon whose data their memoir was founded).

ii. Imagining and publishing statistical data where none exist in reality.

iii. Disregarding the discrepancies between the conclusions arrived at by themselves.

All these conclusions we have proved in our paper in the *British Medical Journal* by several pages of facts and figures.

In your leading article you speak of our terms as amounting to "an accusation which, unless it be thoroughly substantiated, is always liable to recoil upon those by whom it is advanced."

If this was your opinion, we submit that you should have published at the same time our "substantiation," set out at full length in our paper, which you criticize but do not show to the readers of *The Times*.

Yours faithfully,

MARY D. STURGE.
VICTOR HORSLEY.

January 13.

Odd - possibly interesting

| | | | | |
|----------------------------------|------------------------|-------|---------|----------------------------|
| Boarding of Pauper Children | Glasgow Herald | 1910 | Oct | A Criticism anonymous |
| Eugenics | New Age | 1910 | Jan | Letter Ex Libris |
| Brain-cells & Perception (2) | Outlook | 1910 | June | Letter Florence Garg |
| Finger Print Clues | Telephone ? | ? | ? | Budden - Anderson. |
| Principles of Heredity do | Winning Post | 1909 | Dec | J.B. Robertson. |
| Decadence of British Science | Outlook | 1909 | July | anonymous. |
| Jewish Genius | Jewish Chronicle | 1910 | Feb | |
| Bradshaw Lecture | Medical Press | 1909 | Nov | J A Lindsay |
| Fate of the Feeble Minded | Western Mercury | ? | Nov | allusion to N. Home Priest |
| "Cornhill Magazine" | W. Gazette | 1910 | Nov | - Selgwick clan. |
| ? | P. M. G. | 1910 | Aug | - Butler Riviere |
| Ursberg [Colony.] | W. Gazette | ? | ? | "G." |
| A Life History Album | Field | 1903 | April | |
| Erasmus Gallon's Will | Times & Co | 1909 | May | 6 Cuttings |
| Herbert Spencer's Funeral | Times | 1903 | Dec. | |
| Copley Medal award | Times & Co | 1910 | Nov | 10 Cuttings |
| Expensive Children | ? | ? | ? | London P.L. Schools. |
| University Reports | 5 Cuttings | | | |
| Laboratory At Home | Times & B.M.J. | 1910 | June | |
| Proposed Jewish children inquiry | 7 Cuttings | 1909 | | K.P.s request - |
| Eugenics & the Jew | Jewish Chronicle | 1910 | July 29 | Interview with F.G. |
| re Sanatorium Treatment | Medical Officer | 1910 | Sept. | Editorial - Perry |
| Brit. Med. Ass. | N. Post & Co | 1910 | July | Leader & Report - |
| Memor. "Nature & Nature" | W. Sussex Gazette | 1909 | | S. Eustace |
| Sociological Papers III | Academy | 1907. | | archet |
| Herbert Spencer Lecture | Nature | 1910 | | Meldola |
| Heredity W. suffrage | W. Review | ? | | Svend |
| Penal Labor Colony | Xix "Cent"? | 1910 | Jan | Kropotkin |
| Children & Civics | New Age | ? | | F.J. Gould |
| Medico-Psychological Ass. | Lancet | 1909 | | Prof. Bevan-Lewis |
| New Policy for Egypt | Daily Mail | 1910 | June | Flinders Petrie |
| Peersages & primogeniture | Graphic (diagram) | 1910 | July | J. K. Lamond |
| Call of the eldest born | Morning Leader | 1910 | April | Clay Shaw M.D. |
| London Gazette | N. Post | 1909 | July 28 | F.G. knighted |
| The descent of the Poet | Graphic | 1910 | Feb | F.G. & Erasmus Darwin |
| Doctrine of Inheritance | Country Life | 1910 | June | Ray Lankester 'dogma' |

The Clipping attached is from

NEW AGE,

1 & 2, Took's Court, Chancery Lane, E.C.

JAN 13 1910

EUGENICS.

TO THE EDITOR OF "THE NEW AGE."

We must not seek to kill a cause with a phrase. I note that in a review of Sir Francis Galton's "Essays in Eugenics," your reviewer asserts that "eugenics is now quite dead." Happily this is far from being the case, and we might as well declare that Socialism is dead, because, as

syndication—has killed free competition at home, and has unduly raised the cost of the raw material needed by the finishing industries. The agricultural Protection, as well as the industrial, has, moreover, increased the cost of living, and has narrowed down the margin of profit which might have been used like a safety valve for reductions of price to revive trade at home or facilitate competition abroad. . . . At the same time, the increased protection of the home market has admittedly rendered foreign markets more difficult for the German manufacturer. . . . But foreign competition having thus been excluded below a certain price artificially increased, it was in the interests of any home industry, if it wished to enjoy the full benefit of the customs duty, to prevent the competition of the home factories in the same trade, and so the syndicates (trusts) came into operation. . . . That life in Germany has become more expensive within recent years is not open to doubt; it has become more expensive, to begin with, because the price of food has increased. Every new tariff has increased the duty rates on corn and agricultural produce; the importation of meat has been rendered either illegal or is subjected to increased duties. . . . If less was heard of the unemployed in Germany than elsewhere, it must not be forgotten that Germany is a highly-policed country, that the sanction for processions and mass meetings is not easily obtained when the demonstrations are likely to feed the Social-Democratic propaganda."

These quotations, from a perfectly independent source, establish the futility of comparing England with Germany. The conditions in each country vary so much that the working classes should not heed these irrelevant comparisons of Tariff Reform lecturers.

Tariff Reform will entrench the manufacturing and agricultural plutocrats behind the stronghold of corruption. What is needed to raise the English standard of life is larger Labour and Socialist representation. What the German, French, Australian, and New Zealand Socialist and Labour parties have done, the British Labour and Socialist Party can imitate when sufficiently supported by the working and middle classes of England. To allow the House of Lords to seize financial control will postpone urgent social legislation for decades.

Upon these grounds, I urge all moderate men, of whatever party, to vote for the Liberals at this Election when a Labour man is not in the field.

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* * *

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From *Outlook*

4 JUN 14

"BRAIN-CELLS AND PERCEPTION."

[TO THE EDITOR OF "THE OUTLOOK."]

SIR,—Mrs. Florence Gay has expressed her realism very lucidly; but I fear she does not realise that the things *per se* which she regards as the permanent sources of perception—brain-cells, for instance—are themselves, and must be of the nature of perceptions, if not in her mind, at any rate in some other mind, else they would be non-existent; since *esse est percipi*. She believes that brain-cells do exist independently of the mind on which they operate, just as the fiddle and the bow, as well as the ear, would appear to be. She supposes also that the things *per se* are independent of all human minds. But clearly they must exist, even in that case, in some mind. That is Lotze's view as put forward in recent times by Mr. Burke, *vide The Origin of Life*, page 346: "The great universe into which we shall ultimately, consciously or unconsciously, be resolved is mind, and nothing more or less than mind. . . It is here that we reach the threshold of the Temple of Knowledge—where all Nature from that infinitude of aeons past ere matter knew itself, to that infinitude of aeons yet to come, when it will know itself no longer, appears but as a passing thought in that Mind that Is." If the minds in the universe are independent of space and time, as I tried to show in my letter to *THE OUTLOOK*, May 14, they must not be parts of the divine mind, as Mr. Burke supposes. They would be independent units, as Lotze supposes them to be. Mr. Burke was a Pantheist in 1906; but more recently he seems to have adopted a modified form of Leibnitz's monadology, *vide* Dr. Paul Carus' *Philosophy as a Science*, in which he is said to hold that the *Monads* or spirits, individual minds, are the ultimate realities as particles of mind, which struggle with each other by the law of natural selection and the survival of the fittest. The principle of pre-established harmony being dispensed with, because the monads are not absolutely independent of each other, as the now established phenomenon of telepathy shows.

It is interesting to note Sir Francis Galton's letter to the *Times* of Tuesday, May 31, in which he remarks, in dealing with the difficulties which heredity places in the way of the atomic theory in its relation to the extremely complicated mechanism of germ-plasm, that "to some persons it seems almost profane to place the so-called material and non-material matters upon the same plane of thought; but the march of science is fast obliterating the distinction between the two, for it is now generally agreed that matter is a microcosm of innumerable, and it may be immaterial *motes*, and that the apparent vacancy of space is a plenum of aether that vibrates throughout like a solid." Mr. J. S. Haldane expressed, in his presidential address, British Association, 1908, such a view, that the individual particles are themselves *motes*; and it appears to have formed the basis of Mr. Burke's line of argument in the *Origin of Life*. But the two latter are agreed that these *motes* are mere perceptions or ideas, and therefore if they have any permanent existence independently of our minds, must necessarily be ideas in that Divine Mind that Is and forms the Whole, the cultus of the physicist; but the Divine Mind of the idealist: the All in All that Is and must for ever be.—I am, Sir, yours, &c.,

June 1.

THE WRITER OF THE ARTICLE.

Sir Galton £10/-

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From **WESTMINSTER GAZETTE,**
Salisbury Square, E.C.

26 11 10

"CORNHILL MAGAZINE."

The "Cornhill" does not make any distinct departure in its contents apropos of Christmas, but attention may here be directed to the December number. As regards fiction we have the concluding instalment of "The Major's Niece," by Mr. G. A. Birmingham, "Personally Conducted" is an amusing story by S. G. Tallentyre, and Jane H. Findlater's "Charlie Over the Water," begun in the last number, is now finished. Among the miscellaneous articles is another "Pastel," by Mrs. Margaret L. Woods, this time dealing with "Bulawayo and Salisbury." Among other things she tells us that "the prosperity of Rhodesia has immensely increased during the last three or four years," and that "it is steadily moving on the upgrade." This should be welcome news to many. The article is full of interesting facts concerning the residents in the two veldt towns. Mr. Henniker Heaton tells the story of "The Express Letter and the Express Messenger." He shows how the service was established in the teeth of the postal authorities, and he has some hard and not altogether undeserved things to say of the "Mandarins of St. Martin's-le-Grand." "Some Recollections," by Mrs. W. J. Sellar contains references to the late Lord Playfair, Sir Herbert Oakley, Professor Lister, Mr. W. E. Henley, and others. In "College at Eton: a Point of View," Mr. Eric Parker supplies some very readable recollections of the famous school. "A Lion on the Little Tati" is an account of a shooting expedition in the Tati Concessions, south of Bulawayo, by Colonel T. A. St. Quintin, who has had many sporting adventures in different parts of the world, and always delights in telling of them. Mr. Arthur C. Benson's "Leaves of the Tree" instalment this month is devoted to the late Professor Henry Sidgwick. Mr. Benson, referring to the marked intellectual bent in the whole clan of Sidgwicks and Bensons, says he once made out a careful record of their performances, and he thinks that it came out that something like twelve members of the united families had taken first-classes at the University, and that over twenty of them had published books of some kind or another. Sir Francis Galton said it was the most remarkable case of kindred aptitude that had ever come under his notice.

F.32
King Galton

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From

DAILY GRAPHIC,

Milford House, Milford Lane, Strand, W.C.

DEC 1909

EUGENICS AND THE CHILD.

The Educational Committee of the County Council yesterday afforded permission to Professor Karl Pearson, of the University College, to investigate the effect on their vision of the parentage and home environment of Jewish children in East End schools. Professor Pearson wrote that he wished to make researches on a fairly homogeneous group of children, because it had been stated that recent work in the Francis Galton Laboratory of National Eugenics, University College, seemed to show that parentage was far more closely related than home conditions to the physique and mortality of the child.

f.33 r

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THE LANCET,

C. Good, 423, Strand, & 1 & 2 Bedford Street, W.C.

11 / 12 / 09

A STUDY IN THE HEREDITY OF JEWISH SCHOOL CHILDREN.—Professor Karl Pearson has written to the Education Committee of the London County Council stating that recent work at the Francis Galton Laboratory of National Eugenics, University College, seems to indicate that heredity is far more closely related than environment to the physique and mentality of the child, and asking for permission to conduct an investigation, as regards their vision, of the parentage and home conditions of Jewish children in certain schools in the East-end of London. The mode of procedure would be to examine the eyesight of all the children in the schools selected, and to make inquiries at their homes, where the extent of Hebrew character-reading and the size and lighting of the rooms would be noted, as well as other indications of good or poor environment, and the opinion of the teachers would be obtained as to the state of the clothing, &c., of the children. The astigmometer would be the only instrument used and the home inquiries would be conducted by persons of wide experience of Jewish families. The permission asked for has been granted provided that the experiments are conducted under the supervision of the medical officer.

f.34r

Sir J. Galton

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The Clipping attached is from

GLASGOW HERALD.

65-69, Buchanan Street, Glasgow.

21209

HEREDITY AND HOME ENVIRONMENT.

From investigations recently carried out at the Francis Galton Laboratory of National Eugenics at University College, London, it has been demonstrated that the influence of the environment is far less than was anticipated, and that parentage is far more closely related than home conditions to the physique and mentality of the child. Professor Karl Pearson accordingly put himself in communication with the London County Council, and at this afternoon's meeting of the Education Committee he pointed out in a letter that from the side of reform and care of children this result requires very close investigation, and, above all, by researches ad hoc on a fairly homogeneous group of children. Professor Pearson is desirous of conducting an investigation into the effect as concerns their vision and the parentage and home environment of Jewish children in certain schools in the East End; and the committee came to the conclusion that the investigations proposed would furnish information which would be very valuable in other matters than vision, and they accordingly decided that Professor Pearson, who is at the head of the investigations which have been carried on at University College, should be empowered to visit such of the public elementary schools of London as he thought fit in order to continue his studies in heredity and home environment.

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The Clipping attached is from

CHRISTIAN WORLD,

2/12/09

PROFESSOR KARL PEARSON, who is in charge of the FRANCIS GALTON Laboratory of National Eugenics at University College, has made an interesting application to the London Education Committee. He says the work of the laboratory seems to indicate that the influence of environment on children is far less than was anticipated; that parentage is far more closely related than home conditions to the physique and mentality of the child; and that from the side of reform and care of children these results require very close investigation, and, above all, researches *ad hoc* on a fairly homogeneous group of children. He therefore asks permission to conduct an investigation of the parentage and home environment of Jewish children in some of the schools maintained by the Council in the East-end of London. For the present, these investigations will have reference only to the question of eyesight, and the condition of the homes of the children as far as it bears upon eyesight. Although the results of such an investigation may be useful, we would much prefer that the proposal had included non-Jewish children. Any measurements comparing Jewish children with our own, or any comparative investigations, are always bound to be rather in favour of the Jewish child. The Jew is an Oriental; he develops sooner; and there are observers who say that his effectiveness does not last so long.

f.36r

+ 4 Galton

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From

YORKSHIRE POST.

Albion Street, Leeds.

1/12/09

41

122

A novel request from Professor Karl Pearson, the authority on national eugenics, will be made to the London Education Committee tomorrow. He wants permission to make investigations in some of the schools, particularly in the East End among Jewish children, as to the effect on vision of heredity and home environment. It appears from his letter of application that recent work in the Francis Galton Laboratory, which is devoted to national eugenics at University College, seems to show that the influence of environment is far less than was thought, and that parentage is far more closely related than home conditions to the physique and mental capacity of the child. Professor Pearson suggests that he should be allowed to test the vision of all the children in the schools selected, and then he would investigate the homes, noting the extent to which Hebrew books and other prints are read—the Hebrew typography being by some considered particularly deleterious to the sight—

the size and lighting of the rooms, all signs of good or poor environment; and the teachers' opinion would be obtained as to the state of the children's clothing, and so forth. It is obvious that investigations of this sort on a scientific basis will reveal much more than the effect of heredity on vision; they will inevitably provoke further investigations on other matters, and in time we may have through this sort of thing, together with medical inspection, enough data to state the laws.

HEREDITY :

A PLEA FOR WOMEN'S SUFFRAGE.

MOST people believe, in a dim sort of way, that children inherit their talents and peculiarities from both their parents, but that the sons tend to take after their father, and the daughters after their mother. Galton, in his work on "Hereditary Genius," regrets that lack of reliable information makes it impossible for him to estimate the influence of the mother on her offspring, as he is of opinion they are "as important elements in the inquiry as those of the father."¹

As a result of his investigations into the family history of eminent judges, he states "there is reason to believe the influence of females is but little inferior to that of males in transmitting judicial ability."² Again, he says, "A mother transmits masculine peculiarities to her male child which she does not, and cannot, possess." Curiously enough, this is true, but it is true not only of the mother, but of the father as well. Galton himself, in summing up his experimental results, inspires this when he formulates what is known as Galton's Law. He concludes that every ancestor contributes something to the inheritance of the offspring in the following proportions: the two parents contribute one-half between them, the four grand-parents contribute one-quarter between them, eight grand-parents contribute one-eighth between them, and so on, in farther diminishing fractions. Mendel, however, in his memorable work on *Fear*, showed that cases exist where one ancestor may be said to have gone out of count, but, whatever may be said against the general application of Galton's Law, the fact that the actual results of his breeding experiments with Bassett hounds were in accordance with the calculated results, shows that at all events for some species the law must hold good. In addition, we have the often expressed opinion of Mr. Bateson, that Galton's Law is merely an expression of Mendel's Law, in actual moment the results of the two famous experimenters were closely similar. For practical purposes, then, we may state that the chances are that one in four of the offspring will inherit any given character from any given parent. In no case, however, does sex complicate

1. "Galton's Hereditary Genius." P. 63.

2. *Hoc cit.* P. 63

The great and glorious reign of Victoria is too recent to need any comment. It was without doubt the greatest in the annals of England, as it was the longest. From beginning to end it was a triumph for the Queen and her Ministers.

In modern times we have the extraordinary history of the Dowager Empress of China to point to as a witness that women are seldom nonentities in high places, and also the successfully begun reign of that young Queen to whom all eyes have been recently turned.⁵ This paper does not claim, however, to be more than a brief sketch of some women who have been placed in the very highest positions, and enough has been said to show that many of them used their power with great ability, and often with distinct genius.

M. CHATTO SVEND.

5. Queen of Holland.

Reviews

GALTON/2/13/1/7

f.1r

| | | |
|--------------------------------------|-------------------|----------------------|
| Principles of Practical Surgery | KP | Aberdeen Free Press |
| Groundwork of Eugenics | KP. | as |
| Memories of my Life | JH | X ^m Age |
| Aggression of Heredity - | D. Herbert - | The Academy |
| The Laws of Heredity - | A. Reid | W. Gazette |
| Essays in Eugenics | JH | D. Mail |
| The Ascending Effort - | S. Bourne | Journal of Education |
| Heredity | D. Herbert - | New Age - The Lady |
| Alcoholism Memoirs | D. Herbert - | Yorkshire Post |
| Parental Alcoholism do | D. Herbert - | Inver Tines |
| Nietzsche di | KP. - 2112 | Standard 200 pps |
| Mendel & Heredity - | N. Porrit | Temperance Chronicle |
| Primer of Statistics | Balson | Observer 1909 |
| Part IV Treasury | G. Hinton | W. Gazette |
| Character & the D. of S. | | Salisbury Review |
| Natural & Social Morals | | Medical Press |
| Memories | | York Times |
| The Family & the Nation | Poulton | P. M. L. |
| The Ascending Effort - | Garrett Read | Aberdeen Nature |
| Memories | JH | Hospital |
| 89 th Birthday Paragraphs | Whitman | Nature 1909 |
| | George Bourne | New Age |
| | 7 American Papers | T. P. Chubb |
| | 11 papers | M. G. |
| | | Guardian |

Reports of Meetings
 < Committees
 < Lab work

f.2r

Dr. J. G. Galton

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THE ABERDEEN FREE PRESS,
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11. 10. 1909

EUGENICS.

"The Problem of Practical Eugenics," by Karl Pearson, F.R.S., and "The Relative Strength of Nurture and Nature," by Ethel M. Elderton, Galton Research Scholar.

Those acquainted with the "Memories" of Sir Francis Galton, F.R.S., will recollect that one of the successful projects of the grand old man was the establishment at the University of London of the Galton Laboratory for National Eugenics. The two tracts of our heading from the 5th and 3rd series of the Eugenics Laboratory Lectures, are published at one shilling each by Dulau, Soho Square.

Both the tractates are highly technical, and the second is mainly an elaboration of the view that race depends much more on heredity than on environment. "So far as our investigations have gone, they show that improvement in social conditions will not compensate for bad hereditary influence; physical or mental degeneracy cannot be cured by closing public-houses or erecting model dwellings." In the first pamphlet we are told that practical eugenics is concerned with two fundamental problems—(1) The production of a sufficient supply of leaders of ability and energy for the community, and (2) the provision of intelligent and healthy men and women for the great army of workers. We are shown that these ends cannot be attained by philanthropic legislation, which rather tends in the opposite direction, by emphasising environment instead of aiming at a selective birth-rate. There are statistical tables supporting the various points drawn from all classes of our population. The effects of the Factory Acts on the population afford much subject of adverse criticism from the eugenist's point of view.

f.3r

See L. 124. 11

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From

Aberdeen Free Press

. 20. 1 10

THE GROUNDWORK OF EUGENICS. By Karl
Pearson, F.R.S. London: Dulau and
Co.—1s net.

We have here the substance of two lectures introductory to a course on the science of National Eugenics at the Galton Laboratory, London University, of which course the following are the fundamental principles:—

(1) We depart from the old sociology in that we desert verbal discussion for statistical facts.

(2) We apply the new methods of statistics which form practically a new calculus.

(3) We start from three fundamental biological ideas—

(a) That the relative weight of nature and nurture must not a priori be assumed, but must be scientifically measured; and thus far our experience is that nature dominates nurture.

(b) That there exists no demonstrable inheritance of acquired characters. Environment modifies the bodily characters of the existing generation but does not modify the germ-plasms from which the next generation springs. At most environment can provide a selection of which germ-plasms among the many provided shall be potential and which shall remain latent.

(c) That all human qualities are inherited in a marked and probably equal degree. It is easy to see where all this tends, and that the only hope of improving the race lies in selective environment.

The Laboratory is engaged in many investigations which will throw light upon these positions, either that of confirmation or that of doubt, and many thinkers on social questions will follow the search with interest.

f.4r

For Galton

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THE CHRISTIAN AGE,

4, St. Bride Street, E.C.

MILITARY RULE.

IN his interesting and very personal "Memories of My Life," Francis Galton, the famous authority on heredity, writes of the evils and annoyances of military rule as it existed in England at one time during the last century. One annoyance which he himself experienced he described as follows:

"The visit of the Queen to Lord Breadalbane at the neighbouring Castle of Taymouth gave rise to the following permanent impression on me. On returning to my rooms after a walk, I found all my books and things taken away and replaced by the gear of a cavalry officer, who was sitting uninvited at my own table as lord and master of it.

"I could hardly contain my wrath, but he was courteous and amused, al-

though firm. He was billeted there, consequently I must give way and yield my occupancy to him. He had been told that there was another room available for me, to which my things had been taken, but go I must, and at once.

"This little incident made me realise the odiousness and too probable insolence of military rule, and the lesson sank deep. I gained on the spot a Quaker-like repugnance to the sight of the accoutrements of a soldier, that exists to this day under certain conditions, and its source is still recognisable."

A QUESTION OF HEREDITY

The First Principles of Heredity. With 75 Illustrations and Diagrams. By S. HERBERT, M.D. (A. and C. Black. 5s. net.)

DR. HERBERT has written an admirable, and yet, withal, a very strange, work. For instance, he gives us a glossary at the conclusion of his book in which we find such words as "acquirement," "adventitious," "filial," "latent," "nucleus." Now it is perfectly certain that the reader who will need to be told the meaning of the word "acquirement" is never going to understand Dr. Herbert's exposition of Mendelian di-hybridism, even with the rather complicated elucidation of Punnett's squares. Or to put it again from another point of view: he calls his book the "First Principles of Heredity," and the assumption is, therefore, that it proposes to seek out the tyro so as to make rough paths plain for him. But we fear that by the time the tyro in question has reached the end of the first half of the section, entitled "Theories of Heredity," his mind will be in a most unhappy and unenviable state. Dr. Herbert would doubtless reply that the difficulty was native to the subject. But we beg emphatically to differ. The difficulty is rather native to the extraordinary love of the scientific mind for unwieldy and obscure technology. Take so simple an example as the following: Dr. Herbert is speaking of a hybrid showing characteristics intermediate between those of his parents. He says: "The two crossed varieties possess an equal number of determinants, which are all homologous, but heterodynamous." Suppose Dr. Herbert had said, "the two crossed varieties possess an equal number of determinants, which have all the same nature, but exert different tendencies of that nature"! His meaning would have been more pellucid, and incidentally he would have made English of it. Whatever differences of speech arose on that unhappy day at the Tower of Babel, we are sure that no difference could have been more complete than that at present prevailing between the English of literature and the jargon of so-called science. We are not appealing for the would-be simplicity of a

guess that he is a Eugenist, having for intellectual genealogy Weismann, Galton, and Karl Pearson, which would account for the disparity of treatment he gives to the question of Biometrics, and for the fact that he merely gives a careful exposition of the very important findings of Mendelism without seeking to digest those findings with his general scheme of Heredity. Further, he hardly treats of the important question of the direct influence of an environment on an organism, adapting it to itself in contravention of the whole influence of its heredity. He does, indeed, mention Professor Nägeli's experiments with Alpine plants, but this is only in passing. In fact, this whole question deserves more treatment than it usually receives. For it seems that an organism has a strange power of response to its environment, a new environment making the adaptations in it necessary to its survival, destruction only operating if the environment in question be wholly removed from that to which the organism has hitherto been accustomed. This is a setting aside of the power of Heredity indeed, and calls for recognition.

The science of Heredity is a new one. Moreover, it is rising to importance when idealism is raising its head again in philosophy. Its development will be, therefore, one of extreme interest. Perhaps it will learn to avoid that preoccupation with merely intellectual processes that is bringing, if, indeed, it has not always brought, science into such deserved disrepute. Eugenism, for instance, is already failing in this important matter. To hear the average Eugenist argue, it would seem that such specimens of bodily ill-health as Nelson or Carlyle were not worth the propagating. Dr. Herbert's book shows this tendency. Man is indeed an animal; but his possession of mind brings a complexity into the question that makes it impossible to make rules apply to him that have been induced from an innumerable array of examples culled from plants and animals. The question of heredity, if it is at all to be of value in the discussion of sociological perplexities, must make more room for emotional and intellectual problems. Hitherto it has avoided them—presumably, because of obvious difficulty—and Dr. Herbert's book bears the imprint of this lamentable deficiency. But to say that such an avoidance is to make the science incomplete, is to

November 26, 1910

THE ACAI

sympathy with this enthusiast, his fine nature harassed in the turmoil of those clamorous times that centred in the last decade of the eighteenth century. His unhappy position, between the two fires of Royalists and Republicans, is lucidly explained. The Jacobins distrusted him; the Royalists disliked him; a man who simply endeavoured to do what he considered right was in a predicament unenviable indeed. "If I had more ambition than morality," he wrote to Adrienne after his arrest, "I could lead a life very different from this one; but between crime and me there will never be anything in common. I was the last man who defended the Constitution to which we had plighted our troth." France, however, was seething too fiercely at that moment to precipitate any precise code of law or behaviour. Paris was in a fever. Nobody was safe—ironic condition, while a "Committee of Public Safety" was hypothetically ruling affairs! "It was a committee of fanatics," says Mrs. Sichel, "each sincere according to his lights; as sincere, as our English Puritans."

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with his name, he was in prison and helpless. However that be, his fame is still secure, and we merely note the point as a suggestion worthy of consideration. Mrs. Sichel is to be congratulated on this third edition of her fine historical biography; it has given us great pleasure, and is sure to please a large circle of readers.

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SCIENCE.

ESSAYS IN EUGENICS. By Sir Francis Galton. (Eugenics Education Society.)

A short series of essays and lectures intended to illustrate the progress of Eugenics during the past few years, and also "to explain my own views upon its aims and methods, which often have been, and sometimes are, absurdly misrepresented."

C. 10

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From

Jan 10

Essays in Eugenics. By Sir FRANCIS GALTON, F.R.S.
(The Eugenics Education Society.)

Sir Francis Galton (the "Sir" still sounds strange) is our "Grand Old Man" of science, and he has lived to see the word "eugenics," invented by him as long ago as 1883, not only take firm root in the language, but bear fruit abundantly. The core of this little primer is the Herbert Spencer Lecture delivered at Oxford in 1907. It propounds methods of quantitative analysis to be pursued by biometricians, and explains the necessary terminology—deviates, curve of frequency, &c. These technicalities are inevitably dry, but they open up an absorbingly interesting study in which all may bear a part. The lecture is relieved, too, by gleams of humour. "A distinguished clergyman, happily still living, 'bearded' his bishop on a critical occasion. The bishop yielded, and forthwith hair began to sprout in a thousand pulpits where it has never appeared before within the memory of man."

F. 11

by F. Galton

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13 / 1 / 10

The investigations of Professor Metchnikoff in Bulgaria resulted in the astounding discovery that it was no uncommon thing for people to die there at a hundred and ten, or even a hundred and twenty years of age, an extraordinary longevity that was traced to the Bulgarian habit of ingesting a special form of sour milk daily. From that discovery came what is known as the Metchnikoff Sour-Milk Treatment, for which wonders have been claimed by its adherents. "120 Years of Life," by Charles Reinhardt, M.D., which describes the use of the lactic ferments in the cure and prevention of disease and the prolongation of life, will therefore be read with interest, particularly by all who desire to acquire a culture of Bulgarian lactic-acid-forming bacilli, benevolent organisms that are said to have the power of increasing the Psalmist's three score and ten by fifty. (The London Publicity Co., ls.)

* * *

"Essays in Eugenics," by Sir Francis Galton, will be welcomed as throwing light on what is practically a new science. What its progress will be depends, as its author clearly sees, on the trend of public opinion. At present it is merely food for thought, though the result of that thought will doubtless, in the long run, tend towards the improvement of the human race. But travel on such a road is by microscopic advances. (The Eugenics Education Society.)

* * *

Lin H Galton f.12

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DEC 10 1909

From the Eugenics Education Society comes a small volume of "Essays on Eugenics," by Sir Francis Galton, F.R.S. A Huxley lecture of the Anthropological Institute, a Herbert Spencer lecture at Oxford, and papers read before the Sociological Society are included in the collection, which gives in a small space an admirable view of the new science of eugenics, its origin, development and present position.

Eugenics Education Society Meetings, Letters

| | | |
|-------------------------|----------------------|--------------------------------|
| Sidney Webb | Poor Law | London |
| Mrs Ravenhill | Womanhood | " |
| Dr. Slaughter | Poor Law Reform | " |
| J. F. Tocher | Self Children | " |
| R. Newton Crane | Divorce | " |
| Lowes Dickinson | Heredity & Socialism | Glasgow |
| Merritt Hankes | Eugenics & Mendelism | " |
| Dr. Tredgold | Unfit | " |
| Sir James Barr | | L. Pool |
| Dr. Murray Leslie | Woman's Progress | London |
| Crackenthorpe | Annual Meeting | London |
| do | Peerage | " |
| do | | |
| Dr. Lionel Taylor | Lecture | Bradford |
| - | Interview | London Observer |
| G. W. Flood | Letter about | Birmingham Post |
| B. S. Herbert | " | Manchester S. News |
| B. H. Tubbs | " de Cagners | Sheffield D. Tel. |
| Eugenics & Pauperism | Bratbrook | Times 1905 |
| " & Self Children | Tocher | M. Pool 1910 |
| " & Military Service | Melville (W. Col) | B. M. J. 1910 |
| Self selection | Dr. Schiller | A. & N. Gazette 1910 |
| " | " | M. Pool - 1910 |
| " | " | Morning Advertiser |
| Eugenics Review article | Tocher | Standard |
| The Perils of Altruism | Haslemere meeting | Referee |
| | | M. Justice Parker 1910. report |



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From MORNING ADVERTISER,
127, Fleet Street, E.C.

18 DEC 1909

A POOR LAW IDEAL.

Mr. SIDNEY WEBB, speaking at a meeting of the Eugenics Education Society, at Denison House, yesterday, said that the existing poor law operated almost entirely as an anti-eugenic influence. Their first duty, therefore, as Eugenists in England, was to bring about at once a drastic revolution in the present poor law. The minority report was drawn on strictly Eugenist lines, and contained absolutely no recommendation contrary to the best Eugenist principles. It was based on the policy of deliberately altering the social environment, so as to render impossible, or, at least more difficult, the present prolific life below the national minimum standard, or the continuance at large of persons unable or unwilling to come up to that standard of life; the searching out of every person in default, irrespective of his destitution, or his application for relief, the medical and other inspection of all infants, school children, sick persons, mentally defective persons, and all who were unemployed or who otherwise needed public help, so as to discover the unfit, as well as to remedy their defects, segregation, permanent or temporary, of many now at large, enforcement of the responsibilities of parenthood at a high standard, and hence discouragement of marriage amongst those unable or unwilling to fulfil them, and taking care that no one sincerely desirous of fulfilling his social responsibilities should, by lack of opportunity, be prevented from doing so.

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From

Dhy. Tale

16 DEC 1909

EUGENICS AND THE POOR-LAW.

Mr. Sidney Webb, speaking at a meeting of the Eugenics Education Society, at Denison House, yesterday, said that the existing Poor-law operated almost entirely as an anti-eugenic influence, notably in its provision for feeble-minded maternity, in the opportunities for acquaintanceship afforded by the general mixed workhouse, in its failure to search out defectives or wastrels who did not apply for relief, and in the absence of any practical alternative to the outdoor relief now afforded to tens of thousands of feeble-minded or physically defective parents. The inference was not, however, as some eugenics seemed to imagine, that we had better make no public provision at all. The extreme rigour of the "state of nature" was anyhow impracticable. The blind struggle for existence did not even improve the average quality of the community, because it impaired the survivors quite as much as it eliminated the unfit. Nature's unpurposeful struggle often distinctly favoured the less individually-developed prolific organisms as against the more highly-developed and less fertile. In fact, the survival of the fittest in an environment unfavourable to progress might, as every biologist knew, mean the survival of the lowest parasite. The duty devolving on eugenists involved collective regulation and a highly-developed social machinery, and was becoming all the more important in face of the differential volitional restriction of births now rapidly spreading over the civilised world. Their first duty was to bring about at once a drastic revolution in the present Poor-law, as recommended by the minority report, which contained absolutely no recommendation contrary to the best eugenists principles.

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SANITARY RECORD.

30 12 09

Physical Incapacity and the Poor Law.

THE desire for the improvement of the race is growing daily, and although little is said upon the subject there are many who hold strong opinions on the matter. The Eugenics Education Society is doing much in a quiet way to form opinion, and its influence is being felt

in many quarters. Recently Mr. Sydney Webb addressed an influential audience at Denison House, when he pointed out that the existing Poor Law operated almost entirely as an anti-eugenic influence, notably in its provision for feeble-minded maternity, in the opportunities for acquaintance-ship afforded by the general mixed workhouse, in its failure to search out defectives or wastrels who did not apply for relief, and in the absence of any practical alternative to the outdoor relief now afforded to tens of thousands of feeble-minded or physically defective parents. The inference was not, however, as some eugenists seemed to imagine, that we had better make no public provision at all. The extreme rigour of the "state of nature" was anyhow impracticable. The blind struggle for existence did not even improve the average quality of the community, because it impaired the survivors quite as much as it eliminated the unfit. Nature's unpurposeful struggle often distinctly favoured the less individually-developed prolific organisms as against the more highly developed and less fertile. In fact, the survival of the fittest in an environment unfavourable to progress might, as every biologist knew, mean the survival of the lowest parasite. The duty devolving on eugenists involved collective regulation and a highly-developed social machinery, and was becoming all the more important in face of the differential volitional restriction of births now rapidly spreading over the civilised world. Their first duty was to bring about at once a drastic revolution in the present Poor Law, as recommended by the Minority Report, which contained absolutely no recommendation contrary to the best eugenic principles.

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From **MORNING ADVERTISER,**
127, Fleet Street, London, E.C.

8 DEC 1909

IDEALS FOR WOMANHOOD.

Speaking last evening at Caxton Hall, Westminster, on "Eugenic Ideals for Womanhood," Miss RAVENHILL said the sphere of feminine influence had been bounded, quadrilaterally, by the German words "Kirche, Küche, Kinder, und Kleider" (Church, cooking, children, and dresses). Although women had held this limitation to be humiliating, they would, upon reflection, find themselves, not hemmed in by its four walls, but really invested with responsibilities almost too weighty and far-reaching.

They had to set the standard of the ethical code of the world, maintain the health of the community, exercise the power of spending and purchasing—thus influencing the whole complicated machinery of production—and lastly, but firstly in importance, to their care is entrusted the moral and physical development of the greatest of the human assets—the child. If women were worthy to execute this trust they must be eugenicists. They must, by a careful study of morals, hygiene, and education comprehend first, and then put into everyday practice "the science which deals with all the influences that develop the inborn qualities of a race to the utmost advantage" that "aims to represent each class or sect by its best specimens."

The eugenic ideals for women to-day might be briefly summarised as:—To secure, for boys and girls alike, systematic and judicious teaching as to the duty of applying to daily life the lessons of school and college; associating with this a careful inculcation of high standards of religion and ethics; to secure for all young people suited instructions on the greatest power entrusted to mankind—marriage and parenthood—to afford to girls the opportunity of studying the needs of infancy and the art of the right rearing of children; to obtain the more general co-operation of trained women in the government of local bodies or official departments, especially those of which women, girls, and children form a part, and to influence for good the art, literature, and recreations of the nation; training young people in the wise and fitting employment and enjoyment of their leisure.

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From **MORNING ADVERTISER,**
127, Fleet Street, E.C.

8 JUN 1910

EUGENICS AND POOR LAW.

ELIMINATING THE FEEBLE-MINDED.

Dr. J. W. Slaughter delivered an address last evening at Caxton Hall, Westminster, under the auspices of the Eugenics Education Society, on "Eugenic recommendations for the reform of the Poor Law," Admiral Henderson presiding.

In his address Dr. SLAUGHTER said their methods in eugenic work were limited to endeavours to influence public opinion rather than to take practical steps to effect legislation. They were aware that public opinion was far more instrumental than legislative enactments, but unfortunately there were sections of the community which remained unaffected by any statute, and in regard to these they saw no alternative to introducing restrictive measures. It was only as applied to the more defective community that they proposed to effect their purpose by legislative methods. The question of the poor law reform was one of the most difficult to solve. They wanted to ascertain to what extent measures of relief affected the reproduction of hereditary defect. The members of that society considered that the proposals before the public in regard to the poor law failed when they came to consider the difference of kind in those who required relief. They had to deal with a special kind of people, the feeble-minded and poor stock of the community.

It was sometimes suggested that these should be sent to the lethal chamber, but it must be remembered that as regarded their feebleness of mind, those so born into the world were not to blame. There came then the question of biological elimination. It was highly necessary to bring these feeble stocks to a termination, and in some sections of the community this could only be done by protracted detention. The report of the Royal Commission did not recommend sufficiently strong measures, and members of the Eugenic Education Society demanded that the feeble-minded should not be treated unkindly, but that they should be permanently detained in properly established colonies.

f.7r

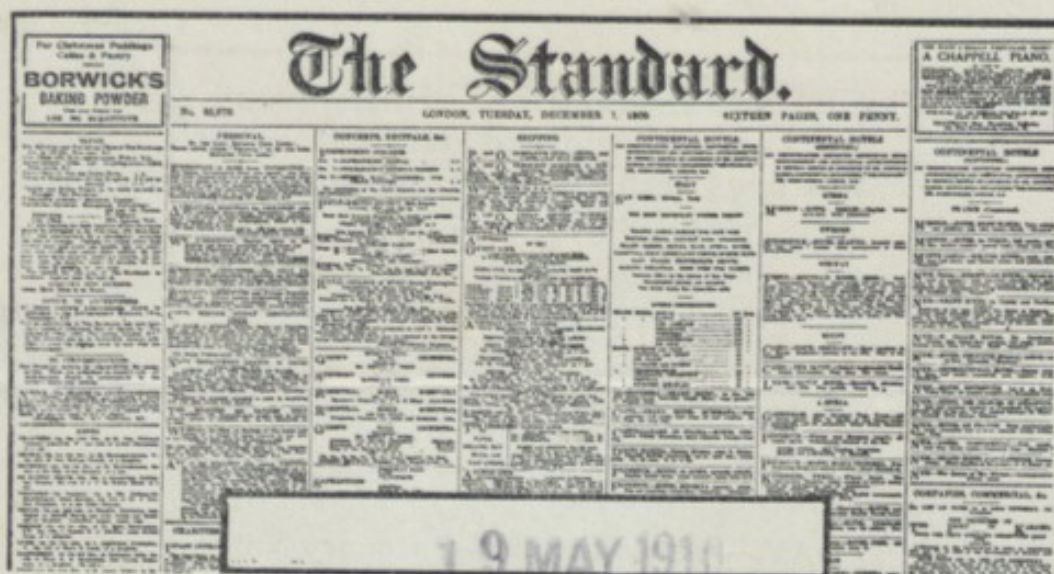
Mr. G. H. Gatten

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A COMPLETE NEWSPAPER.—See Back.

THE CUTTING ATTACHED IS FROM:



SUGGESTED EUGENIC SURVEY.

"The Necessity for a National Engenic Survey of School Children" was the subject of a lecture by Mr. J. F. Tocher, Peterhead, at a meeting of the Eugenics Education Society, at Denison House, Vauxhall Bridge-road, last night, Sir E. Brabrook in the chair. The lecturer observed that under present conditions we were giving a free pass to the most fertile whether of good or bad stock. The situation was accentuated by the constant emigration of a vigorous, if not a more vigorous, class to other shores where virile stocks of British descent were making unconscious experiments for future eugenists to study and unravel. If a national eugenic survey of school children were carried out they should know exactly where they were. After the stocktaking had been finished, reformers and statesmen would be in a position, on mature thought, to suggest a remedy, thus enabling the British race to remain a virile and a capable people.

P. T. O.

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From

DAILY NEWS,
Bouverie Street, E.C.

4 APR 1910

EASY DIVORCE.

INTERNATIONAL LAWYER ON ITS EFFECTS IN AMERICA.

Mr. R. Newton Crane, M.A., the well-known international lawyer, last night addressed the members of the Eugenics Education Society on the marriage laws and statutory experiments in eugenics in the United States.

He declared that long before the word "eugenics" had been coined, or what it was supposed to mean had been formulated into a science, American Legislatures were moved to make laws and to enforce regulations with respect to marriages, not merely to execute the ordinances of the Church, but solely to insure a healthy product of the marriage. Such acts as had been passed or such legislation as was proposed were based upon the requirement that all who entered into the marriage state should be sound in mind and body.

Paradoxical as it might seem, the facility for divorce in the United States might be considered as an encouragement to marriage. Out of every fifteen marriages contracted in the States one at least was dissolved by divorce. The inference was incontestable that the young of both sexes entered into marriage with the knowledge that if it proved unsatisfactory it might be revoked without disgrace to either party, and without impediment to a subsequent fresh contract. From the point of view of both morals and religion such an aspect of marriage was most detrimental to domestic life, but so far as race development was concerned the result was probably beneficial.

Mr J. Galt 10r

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From **GLASGOW HERALD,**
65-69, Buchanan Street, GLASGOW.

GLASGOW EUGENICS SOCIETY.

Mrs Merritt Hawkes delivered a lecture under the auspices of the Glasgow Eugenics Society, in the Botanical Lecture-Room of the University, last night, on "Eugenics and Mendelism." Dr A. K. Chalmers presided.

Mrs Hawkes gave a brief biographical sketch of Mendel, and afterwards described some of his experiments with plants. During the last ten years a great many experiments on Mendelian lines had been made at Cambridge by Professor Bateson and his students. They had shown that in many cases in animals and plants segregation and not permanent blending occurred. For example, if a black Andalusian fowl was mated with a splashed white Andalusian, all the offspring were the fancier's "blue." These, however, did not breed true, but produced black, blue, and splashed-white offspring; and these black chickens when mated with black, and the white with white, produced only black or white grandchickens, in spite of the blue ancestors. Part of the inheritance had disappeared. This was the great teaching of Mendel—many animals and plants had not all the characters of all their ancestors, but segregation had taken place. The animal or plant was not a mixture of ancestral characters, which could easily be measured quantitatively, but quality must carefully be considered also. As regarded man, the Mendelian law of dominance and segregation had been found to apply in a number of cases. For example, eyes which were dark because of a brown pigment were dominant over eyes which were blue or grey owing to a complete absence of brown colouration, and if two pure blue-eyed parents produced children their children's eyes could only be blue, even if a grandmother had brown eyes. There was no escape from this law of Mendel in cases in which it occurred, but it did not apply to many human characteristics as far as we knew at present, although we were justified in supposing that future research would show us many human Mendelian characters. What had Mendelism to teach us about eugenics? First, that there were laws of heredity from which there was no escape; and, second, that we were not a mixture produced by stirring together all the ancestral ingredients, the nature of the resulting mixture being determinable by mathematics, if only the ancestral ingredients were known. We must know the nature and quality of the ingredients, and that knowledge might entirely upset our calculations. If the race was to be improved we must understand and make use of every scrap of accurate scientific data, statistical or experimental. We knew enough to make a number of steps towards the eugenic ideal, but we needed to be backed by the knowledge and sympathy of every citizen of this country. That knowledge could now be acquired by a little careful reading, and it was the duty of all to make an attempt to understand. Eugenics—race betterment—should not be the enthusiasm of a few, but the daily idea of the many.

PROBLEM OF DEGENERACY.

EUGENICS AS AN ANTIDOTE.

Dr A. F. Tredgold, London, delivered a lecture in the Arcadian Restaurant, Glasgow, last night under the joint auspices of the Eugenics Education Society and the Fabian Society. Dr Carswell presided over a crowded attendance, and in introducing the lecturer remarked that the care and control of the mentally unfit was a subject on which Dr Tredgold was a leader. The question had attracted a great deal of attention on the part of educational and other authorities, but so far nothing practical had been done. It was in the province of such men as the lecturer to awaken public interest, and to see whether or not, with a new House of Commons, we could not secure legislation in the matter.

Dr TREDGOLD in the course of his lecture pointed out that there were many ways in which the unfit had been eliminated in the past. In the present day, however, judicial infanticide had been abolished, might was no longer right, and every effort was made to snatch the delicate from the jaws of death. The whole resources of modern science were directed towards the prolongation of individual life. That applied not only to the physically unfit, but to the mentally unfit. It also extended to those of proved social incapacity, and even to those who, having the capacity, would not exert it. The whole country was flooded with institutions whose sole mission was to keep afloat those individuals who could not, or would not, support themselves. But the incompetent, the degenerate, the unfit were not only encouraged to live, they were encouraged to propagate, and that was the most serious matter of all, for there was not the slightest doubt that in the majority of cases the incapacity was inherited and transmissible. Further, the conditions which tended to make life easier for the unfit tended to make it more difficult for the fit. The increasing transference of the burden of the unfit to the shoulders of the fit was beginning to have a serious effect in preventing the development of the better elements of the community. In short, there had been a complete reversal of the conditions which formerly obtained. At the present time there was an encouragement of the unfit and a discouragement of the fit, and the conditions were obviously favourable to the production of degeneracy. Having adduced arguments from facts and figures under mental disease, pauperism, the infantile mortality rate, and the birth-rate to show that there were indications that degeneracy was really present, the lecturer said it was impossible to come to any other conclusion than that we were face to face with a most serious problem, and one which was of importance not only to the future progress but to the very existence of the nation. Although disease had been lessened and the expectation of life prolonged, although a marked reduction had been effected in the wastage of child life, although the social condition and general environment of the people had been rendered more favourable—or, should he say, because of those things?—the stream of degeneracy was steadily increasing and was threatening to become a torrent which would swamp the community. What was the remedy? We must apply the principle of selective breeding. That was the object of eugenics, which was the only science by which the defects of civilisation could be remedied and the further advance of man secured. It was the only antidote to degeneracy. There was one class in particular whose propagation must be checked at all costs—namely, the feeble-minded. It had been clearly shown that such persons—and they were multiplying rapidly—would certainly transmit mental incapacity to their descendants. The recent Royal Commission on the Feeble-Minded drew up a most careful scheme, and if the Government would only legislate on the lines laid down there was not the slightest doubt that not only would the problem of the feeble-minded be solved but that a great step would be taken towards stemming the tide of degeneracy.

After discussion the following resolution was carried:—"That in the opinion of this meeting there is urgent need of immediate legislation on the lines recommended in the report of the Royal Commission on the Care and Control of the Feeble-Minded, and that a copy of this resolution be sent to the Lord Chancellor, the Home Office, the Local Government Board, the Board of Education, the Lunacy Commissioners, and to all the members of Parliament for Glasgow."

Eugenics Education Society

| | | | |
|-------------------------------|----------------------|--------------------|---------|
| D. S. Herbert | A Eugenic Problem | Westminster Review | Article |
| Crackenthorpe | E E S | The Child | " |
| Sir John Cockburn | Child Welfare | " | " |
| Member of the EES | Divorce | Money Leader | " |
| Paragraphs | Lpool Society | Lpool Commis | |
| Temperance Leader | | Temperance Chas. | |
| Sir W. Collins MP | Hygiene Conference | Education | |
| Hygiene Conference | | | |
| Mrs R. J. Harkes | Nat. Sch. | Bk. D. Post | Article |
| | Pauperism | Sunday Times | Leader |
| | Ch. Congress | D. Telegraph | " |
| | Eugenics & Pauperism | Times | " |

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| Health Congress | D. Murray Leslie | Lpool Mercantile |
| Unfit Parents | D. Swain of Clapham | Daily News & Standard |
| Heredity & Environment | P. Sandiford | Labour Leader |
| Certificated Parents | B. Head Health Congress | Daily News |
| Environment paragraphs | | Edinb. Inq. Dispatch |



James Heyman

THE EUGENICS EDUCATION SOCIETY.

By MONTAGUE CRACKANTHORPE, K.C.

President of the Society.

THE Eugenics Education Society seeks to educate public opinion by spreading a knowledge of the laws of heredity, the chief means it employs being lectures followed by discussion, drawing-room meetings, and the issue of its quarterly journal, *The Eugenics Review*. It aims at the improvement of the race by encouraging marriage in the case of those persons who are likely to have sound and healthy children, and discouraging both marriage and parenthood in the case of those whose children are likely to be unsound and unhealthy. The Society's Honorary President is Sir Francis Galton, F.R.S., founder of the Laboratory for National Eugenics, attached to the University of London, and now under the superintendence of Professor Karl Pearson, F.R.S.

The Society has both a scientific and a social side. It is scientific, inasmuch as it is concerned with biometry, a department of statistics, and with Mendelism and cytology, departments of biology. It is eminently social, inasmuch as it deals with the problems of the feeble-minded, the pauper and the vagrant; with race-hygiene and racial poisons; with the effect on "nature," or innate qualities, of "nurture" in that wide sense of the term which includes nutrition, education and environment. It enforces the profound truth that we are not only "the heirs of the ages," but also (through parenthood) largely responsible for the good birth and well-being of our posterity. As Sir F. Galton has said, "Eugenics strengthens the sense of social duty in so many important particulars that the conclusions derived from its study ought to find a welcome home in every tolerant religion," for, it may added, when seriously and devoutly pursued, it is itself a religion. Full particulars regarding membership may be obtained on application to the Honorary Secretary, Mrs. A. C. Gotto, 6, York Buildings, Adelphi, Strand, London, W.C.

CHILD PROBLEMS.

Under this heading problems relating to child life are discussed. The opinions of recognized experts are given and an attempt made to present impartially all aspects of each subject dealt with.

EUGENICS AND CHILD WELFARE.

From THE HON. SIR JOHN ALEXANDER COCKBURN, K.C.M.G., M.D.

Knight of Grace of the Order of St. John of Jerusalem; Late Premier and Chief Secretary of South Australia; Chairman of the Representative Managers of London County Council Elementary Schools; Author of "Australian Federation."

THE science of eugenics ends with the introduction into the world of the infant. It therefore does not include the vital subjects of child-rearing and education, although it furnishes the raw material out of which the future man is, by these agencies, to be fashioned. The tendency to-day is to attach increasing importance to innate qualities and to recognize that, notwithstanding the plastic nature of the human larva, there are strict limits in the case of each individual to its potentialities. Hence the significance of eugenics to child welfare and to the race becomes proportionately emphasized.

It was that distinguished sociologist Benjamin Kidd who proclaimed the fact that the continued existence of a nation depends on the degree to which consciously or instinctively it prepares for posterity, thus exposing the fallacy underlying the plausible theory of the utilitarians that the ethical end was the greatest happiness of the greatest number. The man who asked why he should do anything for posterity as posterity had done nothing for him was a terminal twig from whom evolution has nothing to expect. Eugenics endorses the natural law of unselfish sacrifice of the parent for the welfare of the offspring. In this respect instinct has proved superior to reason and as in the beginning the healing leaves of the tree of life are the antidote to a surfeit on the fruit of the tree of knowledge. In truth, by the law of evolution, our lives are held merely in trust for the benefit of those who are to come after us. What a racial crime then appears the absence of provision for maternity insurance. Surely if the State sees fit to regulate marriage it should regard unsuitability for parentage as an even greater evil than consanguinity. There is a difference of opinion as to the hereditary nature of cancer and some other diseases, but all are agreed as to the deadly deteriorating influence of syphilis. Thousands of children come into the world doomed from this cause to the misery of countless

diseases. It is imperative to prevent children from being condemned to death before they are born, and we should guard, nourish, and succour, as a precious national asset, the expectant mother.

12, Pelham Place,
London, S.W.

From HARRY CAMPBELL, M.D., F.R.C.P.

Physician, West End Hospital for Nervous Diseases; Author of "The Causation of Disease"; "The Differences in Nervous Organization between Man and Woman," &c.

THE cardinal fact to bear in mind in connection with eugenics is that natural selection is the dominant factor in organic evolution. All racial (as distinguished from individual) change takes place by the survival of certain types, *i.e.*, by selection. Whether that selection operates upon insignificant variations, or upon considerable variations (mutations), or whether—as is probably the case—it operates upon both, is a matter of detail.

There can be no doubt that man might be greatly changed for the better by an all-wise artificial selection of certain types. A friend of mine who worships the beautiful and detests physical ugliness in any form, told me that, if he had his way, none but the beautiful should be permitted to multiply; and when it was objected that many people with beautiful characters might in this way be lost to the race, he somewhat brutally replied that, commendable as virtuous ugliness undoubtedly was, we could well dispense with it; that having secured a physically beautiful race, it would be time enough to set about eliminating the morally defective among them, and so breed a race of humans beautiful alike in body and in mind.

Now there can be no doubt such an achievement, although under present conditions impracticable, is, theoretically at least, possible. One might even go further: it would be possible, and this in a comparatively short space of time, greatly to improve man's intellectual powers. All that would be necessary would be to allow none but the highly intellectual to perpetuate their kind. [Whether, however, a highly beautiful, virtuous and intellectual race could work the present social machinery—whether, *i.e.*, it would be capable of carrying on all the specialized forms of activity connected with the modern social organism, is quite another matter!] Finally, it would be possible on the same lines—although I believe we might find this the most difficult task of all—materially to improve the health standard of the community.

That the power for good of judicious artificial selection will some day

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EDUCATION,

24, Bride Lane, E.C.

decline. Happily, attention was now concentrated upon child life, and the influences which acted for weal or woe upon it—voluntary agencies, administrative bodies, and the Legislature—were all alive to the importance of such questions. The years of school life, five to fourteen, were tending to become not merely educational, but a period for the State handling of childhood. If this was Socialism, it arose largely from the legislation of 1870 and 1876.

* * *

The hygiene of childhood (Sir William Collins continued) might be considered under the heads of school hygiene and the pre-school and post-school age. There was also the question of hereditary influence. Nowadays we were told that Lamarck and the view that acquired characteristics were transmissible were a back number. Germ plasm was the potent agency and Weissmann was its prophet. We were recently told that eugenic science had demonstrated that the children of the intemperate were more likely to be healthy than those of sober parents. Sir James Crichton-Browne, in the environment of Fishmongers' Hall, had recently dilated on the value of fish diet and the intemperance of those who drank as the fish, but it was pleasing to observe that he, while endorsing the Eugenic Society's conclusions, had indicated the need for further research. It would require a larger review and the collection of disinterested data before such conclusions could be accepted. Sir William advocated the use voluntarily of hospitals for treating measles and whooping cough, which diseases laid a heavy toll on child life. As to physical education in schools, it should not be in the nature of military drill, for such was not the best as a physical exercise. It gave a bias or a premature specialisation to the boy. More attention should be paid to moral education or the tendency was to make a good animal rather than a good citizen. We should foster self-knowledge, self-reverence, and self-control, and not a military spirit or a morbid form of a spurious patriotism. The State was doing more and more for the individual, but that was no reason why the individual should do less for himself, but rather why he should be encouraged and spurred on to do more and to exercise that spirit of self-reliance and independence which they were trying their best to teach in the schools.

Hygiene
of
Childhood.

A Conference on the Hygiene of Childhood was held last week in connexion with the annual Congress of the Royal Sanitary Institute at Brighton.

Sir William Collins, M.P., was President of the Conference, and, in his address, said that child life was a most sensitive reagent to hygienic and mal-hygienic influences, and conversely such influences were most potent in the case of children. Early reformers like Dr. Farr had taught us in matters of hygiene to keep our eyes on the death-rate, but until lately we had complacently regarded the improvements in the general death-rate while ignoring the fact that the infantile death-rate had until lately shown little disposition to

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From **MORNING ADVERTISER,**
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23 JUL 1917

EUGENICS DISCUSSED. MEDICAL AND LAY OPINIONS.

The annual congress of the Royal Institute of Public Health was brought to a close at Birkenhead yesterday with a joint session, at which the subject of eugenics was discussed.

Dr. R. MURRAY LEECH, of London, who contributed the opening paper, said that the field of eugenics or racial hygiene, which is concerned with the physical and moral well-being of the race, had not yet received the attention it undoubtedly deserved. On all sides we had evidence of physical degeneration and moral decadence, and yet little had been done to arrest this downward movement, which, unless checked, might deprive England of its present proud position among the nations of the world. Our race was more and more being recruited from the least desirable of its citizens. The only remedy consisted in the recognition by the rising generation of the dignity of parenthood and the factors making for biological fitness.

The present educational system ignored the surging life forces, and potentialities of adolescence, pressing for solution and explanation, but which boys and girls were left to puzzle out for themselves. There was now a general consensus of opinion as to the necessity for some form of sex and eugenic teaching among the educational authorities of Europe and America. What opposition there was to be traced to the prevalence of the grossly erroneous belief held by many parents and some teachers, that keeping children ignorant meant keeping them innocent. Sex instincts could not be either repressed or ignored. If the facts are not taught in schools, or elsewhere, perverted knowledge would necessarily be obtained from the most undesirable sources, with the result that the sacred subject of sex becomes associated in a child's mind with obscene thought, word, and action.

Sex evils, so rife during and after the period of adolescence, were almost entirely due to ignorance of sex truths, to the dishonour in which sex matters were so often held, and to the irreverence with which so-called sex relations were so often comminuted. There should in the first place be preliminary education at home. It is the mother who should implant the first seeds of knowledge in early childhood. The child's perfectly natural and legitimate curiosity as to the origin and transmission of life should be satisfied simply and frankly. Such information should be given as something sacred. As the child approaches school age the mother should sound a note of warning regarding the dangers arising from association with precocious or evil-disposed companions. In the case of older boys a similar duty of enlightenment devolves upon the father.

It was now recognised that there must be direct purpose, and in later years, systematic teaching on eugenic problems. Such teaching should be authoritative, and given by qualified instructors of the same sex. The instruction should be given on a basis of perfect frankness and as a serious and sacred matter. There should be encouragement of intellectual, emotional, and social interests outside school work—even selected love romances having their place in this connection.

The medical aspect of eugenics was treated by Dr. HERBERT C. HARNER, of London. The most fertile class of the community, he said, was unfortunately the ill-nourished, the ill-trained, the ill-regulated population of the crowded and unwholesome portions of our large cities. They married early, and their weakly progeny—mentally defective children—were cursed for all they were fit, and were then let loose to work out their own perdition and to perpetuate their worthless species. One remedy was sterilisation of the unfit, but public opinion was not advanced enough to accept that, though, were it better understood, there would be less prejudice.

The State endowment of maternity offered no remedy, for it did not guarantee that the right people would be born. One practical remedy was State interference to the extent of demanding from those desirous of marrying a certificate of physical and mental fitness. Till that step was achieved it lay with the medical profession and with enlightened parents to educate the rising generation in the principles of eugenics.

The dangers to which young manhood and womanhood were exposed, through a lack of knowledge of sexual physiology were dealt with by Dr. J. EMMETT LAMB, who urged such teaching to the young of both sexes.

Lady DOCKRELL, of Dublin, suggested that the status of womanhood would be held in higher esteem if many fathers used a different tone in regard to their wives before their boys. To talk belittling of mothers' limitations was to create in the mind of growing lad a contempt for womanhood.

Dr. SANDERS did not agree that boys had less respect for their mothers than for their fathers. The guiding influence of the mother was the paramount factor for the well-being of the future race.

Surgeon-General RYATT spoke of the complete change for good in the moral tone of the Army among both officers and men. He suggested that lectures in motherhood should be given to young women, followed by granting a certificate. If that practice was established a great point would have been gained, for ignorance of maternal responsibility was an important factor in race degeneration. He was all for enlightening the minds of the youth of the nation on the main principles of sex.

Dr. FREDERICK E. GAFFKIN, school medical officer, Epsford, deprecated the teaching of girls on these matters before they reached years of adolescence, and, if teaching was to be given to the young womanhood of the nation, it should be given by trained married women.

Dr. BURNAN (Dr. Haines) also counselled that it would be well to go slowly. The matter being a difficult and delicate one he was sure they all welcomed that part of Mr. Lloyd George's Budget which granted an abatement of income tax in respect of the number of young children

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From

DAILY NEWS,
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23 JUL

EUGENIC TEACHING.

DISCUSSION AT THE HEALTH CONGRESS.

The annual Congress of the Royal Institute of Public Health was brought to a close at Birkenhead yesterday with a discussion on Eugenics.

Dr. R. Murray Leslie, of London, who contributed the opening paper, said that on all sides we had evidence of physical degeneration and moral decadence, and yet little had been done to arrest this downward movement which, unless checked, might deprive England of its present position among the nations. Our race was more and more being recruited from the least desirable of its citizens. The only remedy consisted in the recognition by the rising generation of the dignity of parenthood, and the factors making for fitness.

The present educational system ignored the surging life forces and potentialities of adolescence which were pressing for solution and explanation, but which boys and girls were left to puzzle out for themselves. There was now a general consensus of opinion as to the necessity for some form of sex and eugenic teaching among the educational authorities of Europe and America. The sex evils so rife during and after the period of adolescence were almost entirely due to ignorance of sex truths, to the dishonour in which sex matters were so often held, and to the irreverence with which so-called sex relations were so often communicated.

Dr. Herbert C. Barnes (London) said that one practical remedy for the increase of the unfit was State interference to the extent of demanding from those desirous of marrying a certificate of physical and mental fitness. Till that step was achieved it lay with the medical profession and with enlightened parents to educate the rising generation in the principles of eugenics.

Dr. Gallikin (Enfield) deprecated the teaching of girls on these matters before they reached years of adolescence, and said that if the teaching was to be given to the young womanhood of the nation it should be given by trained married women.

Dr. Buchan (St. Helens) also counselled that it would be well to go slowly, the matter being a difficult and delicate one. He was sure they all welcomed that part of Mr. Lloyd George's Budget which granted an abatement of income-tax in respect of the number of young children.

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A CHAPPELL PLANT

RACE DETERIORATION.

THE QUESTION OF UNFIT PARENTS.

At the annual meeting of the Medico-Psychological Society of Great Britain and Ireland at Edinburgh, yesterday, a paper on eugenics and race degeneracy was read by Dr. C. T. Ewart, of Claybury, the object of which was to consider whether it was necessary or advisable to introduce ordinances for the discouragement of parenthood on the part of the unfit and the encouragement of large families on the part of the fit. Only one generation had yet suffered, he said, and the results were only now appearing, but the calculation of the numerical effect of a selective birth rate showed that no time was to be lost if the quality of the race was not to deteriorate with increasing rapidity to the lowest types. He believed we were travelling fairly rapidly in the direction of a fall, mainly due to the fertility of the unfit. He suggested compulsory notification by medical men of all cases of mental deficiency. The only other plan was to favour the increase of good stock, and persons capable of producing healthy children should be endowed.

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From

Labour Leader

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A NOTE ON HEREDITY AND ENVIRONMENT.

By PETER SANDIFORD, M.Sc., Ph.D.

One of the most fruitful fields of enquiry at the present time is that into the parts respectively played by heredity and environment in the determination of the physical, mental, and spiritual characteristics of an individual. Modern Society is eagerly seeking the development of the efficient—the fittest mentally and spiritually as well as physically. Hence the production of genius (using the word in its broader sense) is one of the most vital of modern problems.

Because of our lack of scientific knowledge upon the production of genius we have two distinct schools of belief in existence—one which holds that heredity, stock, or breeding is all important; the other, which says that environment is the most potent if not the determining factor. Of the former school, Sir Francis Galton and Karl Pearson, the eugenists, are the leading lights; Lester Ward, the sociologist, is a typical representative of the latter school. The battle-cry of the former is "Genius will out." Galton says, "the demand for exceptional ability, when combined with energy and good character, is so great that a lad who is gifted with them is hardly more likely to remain overlooked than a bird's nest in the playground of a school." The attitude of the environmentalists is represented by Ward in the following:—"If genius is innate and a constant quantity (and Ward believes this to be the case), no effort expended upon it can affect the result. The only way in which effort can be profitably expended is upon the environment. This is plastic. It can be indefinitely modified or completely transformed. Genius corresponds to the natural forces of the physical world. It can neither be increased nor diminished."

An individual, at birth, is endowed with a number of instincts and capacities which form the basis, as it were, of his future mental and spiritual growth. The differences between individuals at birth—between the genius and the idiot for example—are the differences between these various potentialities. A musician, a mathematician, or a scientist has the limits of his capacities defined at birth; the extent of their subsequent development is dependent upon environment. The eugenist school holds that marked native abilities are sure to develop; the sociological believes that unless suitable opportunity is given for development innate capacities will lie dormant or atrophy.

So far as our present knowledge goes, an intermediate position would be the more correct. While not denying the possibility of breeding efficiency and genius, it is also possible to say that suitable environmental stimuli are essential to the development of native capacities. Beethoven was certainly born with a great capacity for music, but it is absolutely certain that if he had been reared in the wilds of Patagonia he would not have produced the wonderful music he did. On the

other hand much time and energy is wasted in trying to develop people along lines which Nature has withheld from them. Modern education does not take sufficiently into account individual differences in every sphere of action. We try to develop people in a lock-step fashion, thereby thwarting nature and running counter to all scientific information upon the subject.

Another point that is often lost sight of by the eugenists is the fact that nature ever tends to breed towards the normal. A six-foot parent has, on the average, children taller than normal, though less than six feet; similarly a five-foot parent has, on the average, children less than normal, though more than five feet. The same thing holds with mental life. The children of parents with genius exhibit less genius than the parents, while children of mental defectives will tend to be more normal than their immediate ancestry. This fact of the tendency towards the normal, which is quite definitely established, is at once hopeful and discouraging. It is hopeful for the offspring of those below normal, but sadly discouraging from the point of view of the production of the genius variety of mankind.

The higher reconciliation of heredity and environment is seen to be rational when we consider environment in a philosophical way. Environment is often looked upon simply as objective or external. But there is also a subjective or internal aspect of environment. Wordsworth was conscious of these differences when he wrote

A primrose by the river's brim
A yellow primrose was to him,
And it was nothing more.

But to a botanist it is much more. Externally the environment—the primrose—is the same; internally it is absolutely different.

What then shall be our attitude upon the question? We must believe, with the eugenists, that it is essential to breed from good stock. (This, at present, is a question for individual consideration, but the time is not many generations distant when it will also be a State matter.) We must also believe with the environmentalists, that the improvement is an urgently needed reform, so that only those capacities which are socially valuable and beneficial will thereby be stimulated and developed. We want, in fact, heredity and environment, not heredity *versus* environment.

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From

DAILY NEWS,
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23 JUL 1911

CERTIFICATED PARENTS.

The eugenists, it is clear, will not be satisfied until they have made it impossible for any unauthorized man or woman to become a parent. At the Health Congress yesterday the disciples of Sir Francis Galton had a first-rate innings, and, unless we are much mistaken, the speeches showed that the theory of eugenics is making great headway in the medical profession. No one, perhaps, need complain of this. The more attention, and scientific attention, that is given to the subject of careful human breeding, the better for the race. Nature, we may be pretty sure, will see to it that the eugenists do not go too far or too fast towards the elimination of the divine chance, which has hitherto been the dominant factor in the relations of the sexes. The familiar questions of course, came up again at Birkenhead: Shall we sterilize the unfit? Shall the State endow maternity? Shall the registrar be empowered, before sanctioning marriage, to insist upon a certificate of

physical fitness from either party? All stimulating questions, and we note that one comparatively reasonable eugenist gave it as his opinion that the public might be induced to sanction certificated parentage, though he was afraid it would boggle at more extreme measures. The fact, of course, is that the laws of life are infinitely too mysterious and incalculable to be forced into such tape-measure formulae as the average preacher of eugenics has so far arrived at, and the average citizen's reluctance to act upon the data already supplied is by no means so unscientific as to certain enthusiastic Galtonians it may appear to be.

F. Galt

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Our social reformers are always telling us about the evil influence of bad environment upon children. This theory is at variance with that which is contained in a publication issued by the Francis Galton Laboratory for the furtherance of the science of eugenics. The experts associated with this improvement organisation assert it is not environment but heredity that shapes human life. Therefore humanity can not be improved by substituting garden cities for slum tenements, but by preventing the propagation of children by the unfit. It is certainly remarkable, despite the grave warnings of some people about slum property, how bright and active the children of the very poorest are. Loathesome environment seems not to damp their natural spirits in the slightest. For vitality and high spirits, a picnic party of Grassmarket children would beat a caravan-load of exceptionally healthy monkeys. If heredity counts for anything, most Grassmarket youngsters have exceptionally healthy parents.

Crackenthorpe

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| XIX th Cent. | Divorce Article | Oct 1910 |
| Times Letter | Re Hereditary Principle | Nov 1910 |
| " | Alcoholism's Offspring | June 1910 |
| Observer | Love & the Race | Dec 1910 |
| Leeds Mercury | } refer to XIX Article | |
| M. & W. Chron | | |
| Sketch | } Divorce Comm Evidence 1911 | |
| Standard | | |
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Christianity. The design is as well calculated to secure the necessary effect as the motive is mean. But we proceed.

Gibbon has treated with consummate skill and sympathy the barbarian side of the picture. His glowing pencil dipped in the gorgeous colours of the Orient emulates Aeschylus and Milton²³ in his tableaux of the moving masses of mankind hastening like eagles to the prey of a declining empire. We seem to see the outline of the Roman *imperium* recede before the onward march of the invaders. We seem to hear the footfall of the various hordes flocking in on every side and distinguished only by the standard of their respective leaders. Alas, 'the dangerous wealth and weakness of the Empire has been revealed to the world!' On they come—the Goths, the Franks, the Scythians, and the Saxons, 'that celebrated name in which we have a dear and domestic interest.' Next comes Alaric, king of the Visigoths, followed by Attila leading his Huns. Then come the Vandals of Genseric and the Ostrogoths of Theodoric. These give place in turn to the hosts of Mahomet's Moslems followed by the Moguls of Tamerlane. Wave on wave they dash in headlong assault upon the once impregnable fortress of the Eternal City, till at length, in the year 1453, the *τρικυβλα*, or final breaker, washes over the steep of Constantinople or Second Rome; and with the capture of Constantinople by the Ottoman Turks the long night of the Middle Ages—'ten centuries of anarchy and ignorance'²⁴—comes to an end.

The very sound of the Middle Ages recalls to the Christian ear the distant triumphs and decay of the early Church. We must glance in a third article at Gibbon's handling of that pleasing awful subject.

A. H. T. CLARKE.

²³ Aesch. *P.V.* 407-36, ed. Herm.; Milton, *P.L.* i. 351 sq.

²⁴ c. xxxviii. For the barbarian onrush read and enjoy Robertson's *Charles V.*, sec. 1, and Hallam's *Middle Ages*, c. iii.

(To be concluded.)

MARRIAGE, DIVORCE, AND EUGENICS

IN this paper it is proposed to discuss, with due brevity, the theories of Marriage and Divorce which during Christian times have prevailed in England, and the modifications of the existing law on those subjects which we may expect in the near future. These modifications will be brought about (1) by the advance made in biological science, (2) by the spread of truer conceptions of the responsibilities of parenthood. No attempt will here be made to discuss either the ceremonies or the property incidents of marriage, which have varied as nationality and custom have varied. To do so would require a volume. On the other hand, the 'theories' of marriage are neither numerous nor perplexing. To the present writer, indeed, there appear to be only three: First, the theory that marriage is a Sacrament, and on that account indissoluble; secondly, the theory that marriage is a civil contract dissoluble at the instance of either party by reason of certain acts or defaults of the other party; thirdly, the Eugenic theory that, since marriage is an institution for (among other things) the continuance of the human race, it should be subject to regulation by the community which must be either helped or hindered in its progress by the children that are born into it.

I

To enable us to gauge aright the value of the sacramental theory of marriage it is necessary to recall the history of the Canon law, which, prior to the Reformation, was binding on clergy and laity alike throughout Western Europe.

The Canon law consists of rules made from time to time by the Christian Church to regulate its own internal administration and its relations to the secular powers. It is derived from several sources. The earliest part of it was 'The Apostolic Constitutions,' reduced to a formal shape in the third century. In the

fifth century appeared a collection of the letters of advice received by the Bishops of the West from their chief Bishop, the Pope of Rome. These letters were styled 'The Decretals.' In the sixth century another set of Church ordinances was issued as a whole under the title of 'The Apostolic Canons.' These Constitutions, letters of advice, and Canons were binding on the entire Christian Church until the happening of the disruptive event to be next mentioned.

In the middle of the eleventh century the Eastern Church separated from the Western, and thereafter each Church had its own code of laws. In the twelfth century the ordinances binding on the Western Church were catalogued and arranged by the Bishop of the ancient city of Chartres. This collection was subsequently revised after the model of 'Justinian's Pandects,' and was distributed into books or parts by Gratian, a Benedictine monk. The first book, called 'Gratian's Decree,' embodied the formal resolutions on doctrine and discipline of the General Councils of the Church from the fourth century onwards. The second book, called 'The Decretals,' brought up to date the Papal letters of advice, the earlier of which had furnished the material of the 'Apostolic Canons.' The third book, 'The Extravagants of John XXII. and other Popes,' consisted of miscellaneous matters not dealt with in the preceding books. The whole work, with later additions, formed, and still forms, the body of the Canon law (*Corpus Juris Canonici*), from which in the sixteenth century the Protestant reformers of Western Europe (including, of course, Great Britain) succeeded, not without human sacrifices, in shaking themselves free.

The staple—so to say—of the Canon law was the resolutions or decrees of the General Councils of the Church. Of these Councils Dean Milman, in his *History of Latin Christianity*, speaks in disparaging terms. He characterises them as 'an unattractive feature of Christianity' by reason of 'the violence, injustice and subservience to authority' too often displayed in them. Certainly they were quite unsuited to legislate on marriage, for of the persons attending and voting at them the great majority were not only unmarried, but were pledged by solemn vows to lifelong celibacy. Moreover, in the times when these Councils assembled the cardinal Christian virtue was not charity but chastity. The business of the saint was, as Mr. Lecky says, 'to eradicate a natural appetite in order to attain a condition which was emphatically abnormal.' Here is one illustration. St. Jerome, in the fourth century, commenting on the story of the Flood, gravely informed his followers that the 'clean animals,' which entered the ark in sevens, typified unmarried folk, and the

'unclean animals' which entered the ark in pairs typified married folk. He adds, with a stroke of unconscious humour, that the number of the unclean animals was limited to a single pair of each kind with the object of making it impossible for either member of the pair to perpetrate a second marriage.

The ante-medieval theologians were great adepts at wresting texts of Scripture from their obvious meaning in order to bolster up their own special views, but they did not rely on Scripture alone. When that failed them they fell back on unverifiable Church tradition. For instance, being unable to get over the fact that St. Peter was a married man, they alleged it to be a Church tradition that he as well as the other married Apostles renounced, after their conversion, those marital relations which before their conversion they considered to be an 'inseparable accident' of conjugal life.

No trace of the sacramental theory of marriage is to be found in the first two centuries. The theory only emerged in the third century, and was not formally and finally accepted as a tenet of Catholic faith until a sitting of the Council of Trent, which in the second half of the sixteenth century issued the following decree:

If anyone shall say that the Church errs in teaching, according to the doctrines of the Apostles and Evangelists, that the bond of matrimony cannot be dissolved on account of the adultery of either party, and that neither, not even the innocent who has given no cause for the separation, can, while the other survives, contract a second marriage, and that adultery is committed by the husband who divorces his wife and marries another, and by the wife who divorces her husband and marries another, such an one shall be ACCURSED.

In the Latin Catechism issued by Pope Pius the Fifth pursuant to an order of this same Council (an English translation appeared in 1839) is to be found an exposition of the above tenet along with some remarkable details. The faithful are there informed not only that marriage is a Sacrament, but that our first parents were well and truly married in the Garden of Eden before they fell, 'prior to which event, according to the Holy Fathers, no consummation took place.' The authors of the Catechism were apparently of opinion that such consummation was part of 'the fall,' occasioned by the weakness of human nature. If this were so, it seems to follow logically that the original intention of the Creator must have been to bring humanity to a full stop after it had run for two lives, and that this intention was frustrated by the folly of a woman who succumbed to a beguiling serpent. However, in a later passage, quite inconsistent with the earlier one, we read that marriage was instituted 'at the beginning' for

the express purpose of *avoiding* the extinction of humanity, and was subsequently elevated to the dignity of a Sacrament 'for the procreation (*sic*) and education of a people in the religion and worship of the true God and of our Saviour Jesus Christ.' A catechumen of to-day who accepts this teaching must either have insufficient brains or marvellous credulity.

As men became more enlightened, the doctrine of the Church that marriage was indissoluble gave serious offence to the laity. Accordingly the advisers of the Pope, perceiving that its rigour must be relaxed, set about to devise 'emergency exits' without sacrificing Church principles. Their device took this form. They declared that marriages, although they could not be *dissolved*, might be *annulled ab initio* for sufficient causes, and that what were sufficient causes it was for the Church to determine. Differences of religion, a former marriage, a vow of chastity, taking holy orders, were all held to be 'impedimenta dirimentia'—a term which served to cover, as the late Bishop Creighton remarked, 'a subterranean labyrinth of subterfuges.'

But the astute ecclesiastics went still further. Availing themselves of a passage in St. Matthew's Gospel—'they twain shall be one flesh'—they broke through the barrier between affinity and consanguinity, and declared that unless a dispensation from the Pope was obtained—and, it may be presumed, duly paid for—one spouse could not marry the kin of another spouse if the kinship was within the fifth degree. Our civil Courts have been reproached for admitting untrue 'legal fictions' in order to further the administration of justice; but, in audacity, the fictions of the Ecclesiastical Courts beat the fictions of the civil law hollow.

II

The first severe blow dealt by the secular arm to the sacramental theory of marriage took the form of dissolution by private Act of Parliament. This experiment was tried shortly after the Reformation, in Queen Elizabeth's time, but was stopped by the Star Chamber. It was revived not long afterwards, when the Star Chamber itself was stopped. Private Acts, however, were expensive luxuries, and before they could be obtained several preliminaries had to be gone through. The procedure was caustically, but correctly, explained by an eminent early Victorian judge when passing sentence for bigamy on a man whose wife had deserted him for another man, taking with her as many of his goods and chattels as she and her lover could lay their hands on. Mr. Justice Maule's words, or rather the version of them that has

been handed down to us, are well known to all lawyers, but are worth repeating here. They were to the following effect :

Prisoner at the bar, you have committed a grievous error. You should have gone to the Ecclesiastical Court and obtained a divorce *a mensa et thoro*. You should then have brought an action for damages against your wife's seducer. He would probably not have been able to pay anything, whilst you would have had to bear your own costs of the action, which would have amounted perhaps to 150*l*. You should next have got a Bill introduced into the House of Lords and proved your case to the satisfaction of that House. This would have cost you 1000*l*. Having taken successfully all these steps, you would have been able to marry again. You tell me you are a poor man and have not a thousand pence, but it is my duty to tell you that there is not one law for the rich and another for the poor.

The sentence of the Court is that you be imprisoned for one day. The day will, according to legal custom, run from the commencement of the Assizes. I therefore order your immediate discharge.

Abuses which survive serious argument are often found to yield to satire. Not long after this trial took place a Royal Commission was appointed to review the law of divorce. Pursuant to recommendations made by that Commission the Divorce Act of 1857 was passed. This Act set up a brand-new matrimonial tribunal from which relief could be had at a moderate cost on proof of certain specified matrimonial offences.

The chief of these offences (when the husband is the applicant) is the adultery of his wife, and (when the wife is the applicant) the adultery of her husband—not, however, simple adultery on his part, but adultery coupled with cruelty, or with desertion for not less than two years. The only remedy of the wife for simple adultery of her husband was, and is, 'judicial separation,' which does not confer the right to marry again.

The working of the Act of 1857 and of the supplemental Act of 1895 is now, as is well known, being inquired into by another Royal Commission, which began its sittings last March under the chairmanship of Lord Gorell, formerly President of the 'Probate, Divorce and Admiralty Division of the High Court of Justice.' The labours of this Commission not being yet concluded, it would be unbecoming in me to offer any criticism on the historical, statistical, or other evidence of fact already taken before it; but 'opinions' expressed by the eminent persons consulted may, as I conceive, be freely commented on. They show much divergence of view in regard to that same legal inequality between the sexes to which I have just called attention. Many of the witnesses condemn this inequality as both immoral and unjust. With this condemnation I cannot agree. For, in the first place, complete matrimonial equality is impossible, Nature having otherwise ordained. Husbands do not take their turn in

child-bearing—it might be well if some of them did, for they would then realise in their own persons the sufferings which their wives, often unwilling victims, have to undergo. In the next place, in 99 cases out of 100, the consequences are not the same, and, in the eye of the law, consequences must always count.

Moreover, the argument for equalisation implies that the circumstances of adultery, as distinguished from the act itself, are always alike. This is to make the same mistake as was made by the *Code Napoléon*, and, until recently, by our own criminal administration, according to both of which the same measure of punishment was, as a rule, meted out to all crimes falling within the same category, with very little regard to the character of the criminal. In England we have 'changed all that,' and in France, too, there has been a great improvement. Thanks in part to Professor Saleilles' *L'Individualisation de la Peine*, which appeared in 1898, the principle of fitting the punishment to the criminal rather than to the crime has during the last few years been largely acted on in the French courts. The frequent awards of 'Borstal sentences' to males between eighteen and twenty-five are corresponding examples at home.

I am aware that in Scotland and many Continental countries the right to a divorce where there has been a sexual lapse is equal as between the sexes, but one would like to know in how many instances a wife has there sued for divorce on the ground of isolated, or (as Lord Mersey phrased it) 'accidental' adultery. One would also like to know whether the actual instances that have occurred have not been cases of collusion—that is to say, both parties have desired divorce on grounds not disclosed to the Court, and adultery by the husband has been admitted, or not denied, by him, in order to give the Court jurisdiction to decree a dissolution.

No; the weak feature of our existing law, and one that gives to the injured wife just cause of complaint, is that no such distinction is made in our Divorce Court between the simple and the aggravated adultery of the husband as is made in our criminal courts between 'common' and 'aggravated' assault. The adultery may have been committed in circumstances of indignity to the wife; it may have been so promiscuous and persistent as to imply deep moral degradation; or it may have been so focussed and concentrated upon a particular individual as plainly to indicate to the wife that her husband's love has gone elsewhere. Yet in all these cases the wife's only remedy is 'judicial separation,' which enables her to keep him at a distance, but does not carry with it her freedom. It is a grievous hardship to a young and innocent wife to be tied fast to an irreclaimable libertine whom

she despises and probably hates, but who is careful not to commit any other matrimonial offence which would entitle her to a complete release.

The hardship which a wife, wedded to an unfaithful partner, may have to suffer under the existing law is great; but greater still is the hardship of the husband whose wife's irritable and irritating temper without positive violence, whose incorrigible extravagance or constant groundless jealousy, makes his home unbearable and destroys his peace of mind. The wife is in such cases morally cruel, but, her cruelty not amounting to 'legal cruelty,' her husband has no remedy, not even that of judicial separation. Lord Stowell, in a famous case, defined 'legal cruelty' as 'a reasonable apprehension of bodily hurt,' and he explained that by 'reasonable' he meant 'not arising from an exquisite and diseased sensibility of mind. 'Petty vexations applied to such a constitution of mind may,' he said, 'in time wear out the animal machine, but still they are not cases for legal relief. People must relieve themselves as well as they can by prudent resistance, by calling in the succours of religion and the consolation of friends.' This definition of 'legal cruelty,' given more than a century ago, was confirmed, or, at all events, not dissented from, by the House of Lords in the case of *Russell v. Russell*, decided in 1897. It is high time that the definition was extended so as to cover the cases just referred to and bring them within the jurisdiction of the Court of Divorce. I do not forget the saying that 'hard cases make bad law'—a saying often misapplied. To judges and magistrates, who have to administer the law as they find it, the saying serves as a caution against misinterpreting the law, but it has no application to the Legislature. For the Legislature can by *amending* the law get rid of 'hard cases,' or, at any rate, reduce them to a minimum.

III

I now pass on to contrast the Church of England's official view of marriage and divorce with the view of the School of Eugenics. But first a few words on the English Marriage Service.

This Service is undoubtedly a fine specimen of stately, musical English prose, but, reflecting, as it does in parts, the Tridentine Catechism, much of it is sadly out of date. Its references to the Book of Genesis are particularly unfortunate. Sarah, the wife—and, strange to say, the half-sister—of Abraham, was not precisely the sort of woman one would select for an example at the present day. To begin with, she was, we are told, ninety years old before

she gave birth to a child. Her prolonged barrenness naturally caused deep disappointment to herself and her husband, for Abraham had great possessions. At last she took a step which could only have been taken in a land where polygamy was rife and tolerated. She suggested to Abraham that he should make a concubine of her own personal attendant, Hagar, and he seems to have agreed as a matter of course. As soon, however, as Hagar had done her part and 'raised up seed to Abraham,' Sarah, in a fit of furious jealousy, drove her and her babe out into the wilderness to perish. It is a touching picture, that of the young mother sitting by a 'fountain of water' with an 'angel of the Lord' consoling her. But the only moral to be drawn from the narrative is that wives may be very unreasonable, and also terribly unjust. To which of the newly married couple, both of whom are supposed to know their Bible, is this warning to-day addressed? To the bridegroom or to the bride? Perhaps to both, since jealousy as a disturbing factor in conjugal life is not the monopoly of either sex.

Again, in this same Service the marrying pair are exhorted to 'live faithfully together as did Isaac and Rebecca.' But Rebecca was anything but a model wife. She practised a heartless deception on her husband when his eyes were dim with age, thereby fraudulently depriving her elder son of his father's blessing because she preferred her younger son. There seems to have been nothing against Esau, for when he sold his birthright he was 'at the point to die.' When Isaac asked for venison he hastened to procure it by starting on a hunting expedition. It shocks the lay, unprejudiced mind to read that Rebecca carried out her treacherous plot while her eldest born was thus discharging a 'pious' duty.

It will, perhaps, be said in defence that these old-world allusions are harmless because no one attends to them—that the principals are dazed by their new positions, that their female relations and friends are busy examining each other's 'frocks,' and that the men, having no corresponding distraction, are too bored to listen. But what a grand opportunity is lost for a live oral address, such as I once heard delivered in the chapel attached to a monastery in the South of Europe, setting forth the responsibilities of the married state, or (if this is asking too much) for calling in aid one of those effective long pauses whose silence is more eloquent than spoken words! What, anyway, is the use of telling a twentieth-century young woman that she is 'to be subject to her husband as Sarah obeyed Abraham, calling him "lord"'? She has no intention of doing anything of the kind, and, if she had, the manners of her circle would soon induce her to alter her mind.

One other point. This Service begins by informing the bride and bridegroom that marriage was 'ordained' for three

purposes: (1) For the procreation of children (this for brides of all ages); (2) for a remedy against sexual sin; (3) for the mutual society, help, and comfort the one spouse ought to have of the other both in prosperity and adversity. Admirably conceived, admirably expressed, but surely the order of the purposes is wrong, and the first and the third ought to have been transposed. Many of the happiest and most successful marriages have been childless. On the other hand, many that have been fruitful have been made miserable because the mental or bodily condition of the children has been such that it would have been better if these children had never been born. The official Church takes no note of these things. It blesses indiscriminately the union of every couple that asks for its blessing, provided only that the necessary notices have been given and that there is no evidence of any such 'lawful impediment' as is indicated in the 'Table of Kindred and Affinity' printed at the end of the Prayer-book.

The work which the Church fails to do—is perhaps incompetent to do—is left to be done by Eugenics. With an eye both to domestic happiness and to the progress of humanity, Eugenics urges the importance of 'right selection' *before* marriage, holding that without such selection the vows of love and fidelity exchanged at the altar may, and probably will, turn out to be a mockery. For the same reason Eugenists protest against the giving in marriage of young women by their parents and guardians with a view to secure what is vulgarly called 'a good match.' A really 'good match' requires not only mutual love, but common or reciprocal interests in life; that is to say, either that both parties should be interested in the same things, or, better still, that each should be interested in the 'things' of the other while cultivating separate interests of his or her own. This is the key to that intimate association and friendship which stands the test of time. This it is, when there are added to it the 'things of the Spirit,' that makes a happy home. Eugenics, although it primarily means, as everyone knows, 'good breeding,' also includes good environment. It therefore lays very great stress on the happiness of the home, for happy homes make happy children, and happy children have far better chance than unhappy children of growing into good and useful citizens.

When—as, alas! not infrequently happens—parents, though continuing to live under the same roof, have become estranged from each other, owing, it may be, not so much to any definite fault on either side as to differences of temperaments and tastes, which, widening with the years, have little by little riven them asunder—then the children, with their extraordinary intuition, quickly become aware of the fact. They feel it before they are conscious

of perceiving it. Far better for them had their parents agreed to part than that, without any intention to do so, they should reveal the secret of their unhappiness, or, from purely worldly considerations, live artificial, make-believe lives in order to 'keep up appearances.' How often does the acute, confidential lawyer, called in to unravel some matrimonial tangle of 'the classes,' make the following appeal to wife or husband, 'For the sake of the children try again'! And when his advice is followed the veteran expert rejoices that at least on that occasion he did 'a good work.' Yet in cases of ascertained, deep-rooted incompatibility it may well be that the plea 'for the sake of the children' is really one of the most cogent arguments for separation—a separation which shall be voluntary and have in it nothing of anger, nothing of after-bitterness. For the persons who act on the advice so given may, it is true, remain together for a time, ostensibly united, but in fact more disunited than before, fondly imagining the while that the children 'know nothing,' whereas these same children have fully grasped the situation, are possibly sitting in the seat of judgment, or else, with hidden flame in their hearts, taking sides with one parent against the other. A frank avowal of life's actualities is a hundred times better than covert or half-suppressed discord like this. And so it is in dealing with the young in all matters that concern the relations between the sexes. Parental sincerity is like opening the windows and admitting fresh air into the house. Parental insincerity is like closing the windows and pulling down the blinds. Then, as every schoolboy and many a schoolgirl knows, the air within the darkened chamber—not only the air that feeds the lungs, but also the air that feeds the thoughts—soon becomes charged with poison.¹

But in the interests both of the children and of the community Eugenics goes further still. It insists that, so far as possible, the marrying parties should come of sound and healthy stocks. It holds that what (among other things) distinguishes man from the lower animals is that he is a responsible being to whom have been made known those physiological truths which enable him to elevate his kind. Without elevation—degeneracy and death. For the world never stands still. More nations have perished by internal decay than by defeat in open war.

One half of Eugenic teaching is, accordingly, concerned with the production of the fit; the other half with the elimination of

¹ In Austria the Courts grant divorce to Protestants, and in Sweden and Switzerland to the population at large, for incompatibility amounting to insuperable aversion, after there has been separation for a time and attempts at reconciliation have failed.

the unfit. By fitness or unfitness are here meant the presence or absence of that amount of health, intelligence, and aptitude for moral training which goes to make up civic worth and usefulness. These two halves are complementary to each other, since selection implies rejection. The first half is called Positive or Constructive Eugenics, and its earliest exponent was Sir Francis Galton in his *Hereditary Genius* (1869) and *Natural Inheritance* (1889). It justifies its name by teaching one generation to be at once the architect and the builder of the next, using the best available materials. The second half is called Negative or Restrictive Eugenics. It teaches the restriction, or restraint, of marriage whenever and wherever the materials to hand are so inferior that they ought not to be used at all.

It follows from these definitions that, according to Eugenics, marriage and divorce come under the same moral law. Just as there are marriages which, in the interests of the race, ought not to take place, so there are marriages (examples will be given presently) which, having taken place, ought, in the interests of the race, to be dissolved. The doctrine that, once it has been solemnised by the Church, marriage is indissoluble, appears to the Eugenist to be, even on biblical principles, irreligious because inimical to the welfare of humanity, since man 'having been made in the image of God,' humanity is of all Divine institutions by far the best and the highest.

The present is not the occasion for presenting even a bare outline of the biological and biometrical researches on which Eugenics rests. Those who would master this knowledge should study the writings of Francis Galton, August Weismann, J. A. Thomson, R. H. Lock, Karl Pearson, Archdall Reid, Alfred Ploetz, and others. I do not say that all these authorities are agreed. They are not. But there is enough agreement between them to establish this proposition—that insanity, feeble-mindedness, syphilis, tuberculosis, and many other diseases (including eye-defects) are inherited in the same way and to the same extent as are stature, ability, and eye-colour. Direct transmission from parent to child in the sense in which a letter is transmitted through the post there, of course, is not, for disease, whether mental or bodily, is not a material thing. It is a process which runs its course in some part of the human frame. Tuberculosis and syphilis offer as good an illustration as we could desire. Both are due to specific microbes, but the microbes themselves are not transmitted, for the simple reason that it is the germ-cell that carries the heritable factors, and the microbe cannot form part of the organisation of a germ-cell. What is inherited in each case is, as Thomson points out, a predisposition to caseous degeneration

of tissues and a vulnerability to the very kind of microbe which first invaded the parent, should such microbe at a critical moment attack the child or the full-grown man. This degeneration or vulnerability may not manifest itself till late in life, or until the second or third generation, the prior generation having been passed over.

In the above enumeration of heritable 'defects' I have purposely left out 'habitual drunkenness' or 'alcoholism,' about which a controversy has for some months past been going on in the *Times* and elsewhere. Let us see how that controversy stands. I will begin by citing the testimony of Dr. Sullivan, a high medical authority, who has written a treatise on 'Alcoholism.' He tells us that in many defective nervous developments of humanity parental alcoholism exercises a causal influence on offspring. In epilepsy such influence has, he says, been noted by one careful observer in 21 per cent. of the cases, by another in 28 per cent., by a third in 20.2 per cent. In idiocy it has been traced to the father in 471 cases, to the mother in 84 cases, and to both parents in 65 cases out of 1000. In 150 idiots and imbeciles whose family history was investigated by a well-known mental pathologist, Dr. Tredgold, it was found present in 46.5 per cent. of the cases, usually in association with insanity or other neuropathic conditions. In prostitutes it has been found in 82 per cent., and in juvenile criminals of weak intellect in 42 per cent. Has this record of facts been displaced by the now famous 'Memoir' lately issued from the Galton Laboratory and based on the examination of certain children attending elementary schools in Edinburgh and Manchester? I do not think it has. One would not expect traces of the 'alcohol taint' to be discoverable in a child of tender years; in fact, its non-appearance in such children proves nothing. What we want to know, and what the *Memoir*, limited as it was in its scope, does not tell us, is whether the tendency to excessive drinking is more strongly manifested in *adult life* when the parent was a drunkard than when the parent was not a drunkard.

Let me put the problem, as I have done once before, in a slightly different form. Given a man or woman of intemperate habit, what will be the effect on the possible children if he or she marries? Is there any risk of a predisposition to drink being communicated to the next generation? Answer: There is such a risk, and the risk is proportional to the degree in which alcoholic excess has become an indispensable factor of the daily life of the parent. For alcohol may by its continued use work like a poison in the system even when it is not a poison to start with. If the alcohol has been allowed to penetrate so deeply as to affect the

germ cells as well as the somatic cells of the parent, then it is almost certain that the children will be affected also. There will be transmitted to them a constitutional weakness which will sooner or later express itself in some form of degeneracy, although in what particular form we may be unable to predict.

The Eugenic position with regard to all the above defects is (I repeat) that when before marriage any of these defects is known to be present in either of the parties, the marriage ought not to take place, and that if it has taken place and the wife is not past child-bearing it ought to be dissoluble at the instance of the untainted, unblemished party. Hence, too, it follows that a husband or wife who is divorced on any of the above grounds should be debarred from marrying again, otherwise the mischief, instead of being extinguished (so far as it can be extinguished by law), might break out afresh in a new quarter.

It will be observed that I say the marriage should be dissoluble, not that the parties should be entitled to a judicial separation only—and for this plain reason. It is monstrously unfair that a healthy, and perhaps young, woman—and the same, *mutatis mutandis*, holds good of a man—should be condemned—it may be for life—to involuntary celibacy for having ill-selected her partner or (as often happens) for her partner having been ill-selected for her.

Here, however, a distinction must be made between different strata of society, between what are called 'the classes' and what are called 'the masses.' Under the Act of 1895 (referred to already) power is given to stipendiary and other magistrates to make an order for separation against deserting or brutal husbands. These orders appear to me to stand on a different footing from orders for judicial separation pronounced in the Divorce Court. A wife cannot apply for a magisterial separation order unless she is living apart from her husband, and her main object usually is to obtain maintenance for herself and her young children out of her husband's weekly wages. She does not in most cases wish for a divorce in order to be able to marry again. Of matrimony, indeed, she has already had too much. But here, too, she ought to have the option after, say, twelve months of separation, to convert her protection order into an order for divorce. She may have an opportunity of making a fresh start in life by a worthy marriage, and, if she desires to be free, why (except on the sacramental theory) is she to be held bound when all the three purposes of marriage have, in her case, been frustrated? It is, I know, said that the husband, at all events, should remain bound as a punishment for his misconduct, and that the innocent wife cannot therefore be freed. But surely this is a worthless argument, for

there can be no greater desecration of marriage than to insist on its continuance merely to penalise the offending partner.

For the realisation of their general ideas, for the achievement of their general purpose, Eugenists do not at the present moment make appeal to the Legislature. They rely on the growth of public opinion—the oracle without whose favourable word no parliamentary ventures nowadays to stir.

Let me proceed to give a few instances gathered from my own experience of the advance made by public opinion during recent times.

1. Some thirty years ago a young lady of my acquaintance was asked in marriage by a man of ample means and good position in his county. Unfortunately, although apparently quite sane at the time of his proposal, he had, owing to brain trouble for which he was in no way answerable, been more than once in a lunatic asylum. When this sinister fact became known to the girl's family they insisted that no engagement should be entered into until medical specialists had been consulted. This was done, and the specialist opinion was that the marriage of the man would 'in all human probability effect his complete cure.' The opposition was thereupon withdrawn. The marriage took place, and of it several children were born. The medical forecast, however, did not come true. The man, who was now both a husband and a father, continued to be subject to his old mental disturbances, and had now and again to be put under restraint. I abstain from filling in the details of this sombre picture. I merely ask whether there is to-day a single brain-specialist in the United Kingdom who would counsel or countenance such a marriage, and, if he did, whether a single relative would accept and act on his opinion?

2. In the same decade another lady known to me married an officer in the Army or Navy (it does not matter which), who after the marriage retired from the Service and 'went into business.' Later on he developed the drink habit, and along with it (as frequently follows) the habit of marital unfaithfulness. At last his mind became so affected by his indulgences that he had to be taken away from his home; his wife, with her young children, returning to her father. After about five years of separation the doctor in charge pronounced the husband to be 'completely cured.' The husband then proposed to his wife's father to come back to his family and to resume his former position. The father, as he was bound to do, laid the letter before his daughter. Her answer was a point-blank refusal conveyed in these precise words: 'I have no difficulty in forgiving him his many infidelities, but I

will never forgive him for having given to my children a lunatic for a father.' The 'county' soon got hold of the news, and was unanimous in its disapproval, if not in its condemnation, of the wife, some persons not hesitating to declare that she was 'no Christian woman.' If this sad history could repeat itself to-day, would, in any county in England, the same verdict be delivered?

3. In or about the year 1885, a curate in the East-end of London—a perfect stranger to me—called at my chambers in Lincoln's Inn to ask my non-professional advice. He said he was much troubled by certain aspects of life as lived in his parish, more especially by the sufferings of wives who were bringing into the world children (not always sound and healthy ones) for whom, whether sound or unsound, it was hard to find either room or food. He proceeded to show me a pamphlet he had written, which furnished these poor women with simple, straightforward counsel to help them in their difficulties. But he felt—and I agreed—that before distributing the pamphlet in his parish he ought to submit it to his Bishop (Dr. Temple). This he subsequently did, and Dr. Temple a few days later requested him to call. Dr. Temple, who had contributed to the famous volume *Essays and Reviews*, which made such a stir in the 'sixties of the last century, did not, as I understood, personally object to the contents of the pamphlet. But he did object, officially, to its circulation in his diocese. In the result, my 'client,' disheartened, threw over the Bishop, the pamphlet, and his curacy, and emigrated to Australia. Would Dr. Temple, if he were now living, take the same view of his duty? I venture greatly to doubt it. For was not his article in *Essays and Reviews* entitled 'The Education of the World,' and did it not speak out as follows?

This power, whereby the present ever gathers into itself the results of the past, transforms the human race into a colossal man. . . . The successive generations of men are days in this man's life. The discoveries and inventions which characterise the different epochs of the world's history are his works. The creeds and doctrines, the opinions and principles of the successive ages are his thoughts. He grows in knowledge, in self-control, in visible size, just as we do. And his education is in the same way, and for the same reason, precisely similar to ours.

Here we have the law of human progress expressed in a familiar figure. Here (in embryo) is the law—and the gospel—of Eugenics. And this 'unorthodox' essayist of 1860, then Headmaster of Rugby School, became, in 1896, Archbishop of Canterbury, Primate of all England.

4. In the spring of last year a distinguished Bampton Lecturer, holding an important benefice in the West-end of London, which

he has since exchanged for a higher dignity, wrote the following striking passage :

Eugenics merely extends a principle to which the Church is already committed, the principle that material environment is a factor in spiritual welfare. This is the meaning of the rapid growth of Public School and University Settlements in the poorer parts of our great cities, and of the complicated organisation of clubs and societies which now forms so important a part of its Church life in town parishes, and drew from an Anglican layman the half serious reproach that the clergy are 'leaving the Word of God to serve billiard tables.' And the same principle underlies the whole of the philanthropic effort, so closely and so honourably connected with Christian religion, for the care of the helpless and suffering. Hospitals, orphan homes, institutions for the care of the feeble-minded, and all the many agencies for the relief and alleviation of poverty and infirmity, obtain an amount of support from Christians, as such, which plainly testifies that the Church is willing and anxious to do everything in its power for the battle of life and for the Kingdom of Heaven, which to the Christian are two ways of expressing the same thing. But science, which is simply the trained and co-ordinated observation of facts, teaches us that pre-natal conditions are in a large proportion of cases as important as post-natal, and it follows that the duty is to prevent the causes rather than to alleviate the results of physical and intellectual degeneracy.

The curate and the Church dignitary, as will be noticed, were travelling on the same road and towards the same goal, but were passing different milestones, the curate, in his burning zeal, running ahead of the other. Different, too, were their respective appreciations of what they were about. The curate (like M. Jourdain and his prose) was talking Eugenics without knowing it to the costermonger class; the Church dignitary knew that he was talking Eugenics, and talking it to a cultured class, for the quoted passage was part of an address he delivered before 'The Eugenics Education Society' in Caxton Hall, Westminster.

And now let me shortly sum up this paper :

(a) Marriage—according to Eugenics—a privileged, yet terminable, contract, a contract of supreme moral, spiritual and social value, not an indissoluble bond.

(b) Restrictions on marriage to be based, not on decrees of General Councils of the Church, but on known laws of health and human progress. These laws, once ascertained, to be as binding on the conscience as the decalogue.

(c) Marriage not to be entered on unless there are present soundness of body, saneness of mind, and unity of spirit. These conditions fulfilled, marriage takes on a sacramental quality; without them, incalculable misery may ensue.

(d) The mission of Eugenics—the education of public opinion on the great question of the relations between the sexes.

(e) Public opinion once fully and rightly formed, the required legislation will follow automatically, unchecked by futile party friction or by wearisome debate.

MONTAGUE CRACKANTHORPE.

This paper is not to be taken as embodying the views of the Council of the Society named above (of which the writer is President), no member of that Council having, for lack of opportunity, been consulted upon it.—M. C.

Mr. F. H. A. L. T. A.

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From The Nineteenth Century

Oct 1911

Sir F. Galton

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From THE TIMES,
Printing House Square, E.C.

26 MAR 1911

"THE HEREDITARY PRINCIPLE."

TO THE EDITOR OF THE TIMES.

Sir,—The brief but timely letter of my friend and teacher Sir Francis Galton seems to require a little expansion in order to clear away the confusion between "heredity" and "inheritance" shown by the now frequent use of the phrase "the hereditary principle" as applied to the House of Lords. This phrase (to repeat what I said last January in the *Eugenics Review*) is, as so used, inaccurate. Strictly it denotes the fact that by law, or convention, titles which carry seats in the Upper House descend exactly like real property from a father to his eldest son. This is equivalent to "inheritance by primogeniture," which is no principle at all, and is, of course, quite distinct from the biological principle of heredity, which is a law of nature. Yet only the other day a well-known statesman said in public, "It is very easy to go too far in condemning the hereditary principle. There is something in heredity." I entirely agree that there is, but there is little or nothing of "heredity" in the so-called "hereditary principle."

I must not be taken as asserting that the words "laws of inheritance" cannot properly be used to indicate the transmission of mental or physical characteristics from parent to offspring. Darwin, whose terminology is always exact, so used the words in his "Descent of Man," Part II., Chap. 8, where he says:—"In order to understand how Sexual Selection has acted on many animals in many classes and in the course of ages has produced a conspicuous result, it is necessary to bear in mind the laws of inheritance so far as they are known. Two distinct elements are included under the term 'inheritance':—the transmission and the development of characters, &c." The point I desire now to make is that whilst "heredity" may cover natural "laws of inheritance," it can never cover such artificial and conventional laws as Primogeniture, Gavelkind, Borough English, or Coparcenary.

Let me make the distinction still more clear by referring to two out of the three methods of eugenic research now being pursued, viz.:—(1) The statistical or biometrical; (2) the analytical or chemical methods. By the first method, initiated by Sir Francis Galton and brought to great perfection by Professor Karl Pearson, large numbers of family facts have been and are being collected, and plotted out in curve more or less regular which, when compared or "correlated with" each other and with the normal course of frequency of Gauss (itself a graphic representation of the theory of probabilities), suggest "laws of inheritance" of the particular qualities under observation. This is very much what Kepler did when he recorded the successive positions of a planet and inferred from them that its orbit was an ellipse. But just as Kepler's observations gave us no "theory of attraction" between material bodies, so Professor Karl Pearson's observations, valuable as they are, give us no "theory of heredity."

Theories of heredity can only be established, if ever, by following the method of which August Weismann is the most powerful living exponent—viz., by an analysis of the cells, germinal and somatic, which go to make up the living organism. Similarly, "theories of attraction" can only be deduced from investigations into the ether in which all bodies are immersed (if, indeed, they do not form part of it), whereby, instead of being separated from each other by a vacuum of interspace, they are in reality linked by a plenum of a most subtle and elusive kind.

Permit me to add, for the benefit of the uninitiated, that the third method of eugenic research is "Experimental Mendelism," which, as revived by Professor Bateson and others, bids fair to have a great future before it. But since the segregation of unit-characters (to take its most prominent feature), even if proved to hold true of man, is still a "law of inheritance" only, and cannot supply a "theory of heredity," Mendelism would not serve any better than Biometry to illustrate my present point, which is that "laws of inheritance" and "theories of heredity" are correct and intelligible expressions, each having its distinct meaning, but as there is no such thing as a "principle of inheritance" or "principle of heredity" in relation to the House of Lords, there can not be, in that relation, any such thing as an "hereditary principle." The phrase may be, and is being, used for convenience to denote the constitutional right of certain individuals to sit and vote in the Second Chamber, but it has no biological or eugenic significance.

I am your obedient servant,
March 24. MONTAGUE CRACKANTHORPE.

f.12r

For F. Galton

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From

THE TIMES,
Printing House Square, E.C.

7 JUN 1918

ALCOHOLISM AND OFFSPRING.

TO THE EDITOR OF THE TIMES.

Sir,—My friend Sir Francis Galton says that my recent letter "casts doubt on the value of biometric conclusions." May I say that the doubt it cast was not on the general value of these conclusions, regarded as inferences from patent observable facts, but on their value when interpreted as a guide to individual practice?

Sir F. Galton further says that he does not understand my remark that "biometry is based on the law of averages." No one knows better than he (for in one of his books he describes an apparatus which he invented to illustrate the fact) that, if the field of observation is large, small variations due to independent causes tend to neutralize each other, and that the larger the field the closer the approximation to the true mean or "average" which it may be forced to yield. Hence, in an admirable article on "Probability" in the *Encyclopædia Britannica*, Vol. 19, Professor Crofton says, "the whole of statistics depends on the doctrine of averages." Now, biometry is a department of statistics, and what Professor Crofton here means by "doctrine" I, in my letter, meant by "law."

I remain your obedient servant,
MONTAGUE CRACKANTHORPE.

June 3.

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From
THE OBSERVER,
125, Strand, W.C.

LETTERS TO THE EDITOR

"LOVE AND THE RACE"

Sir,—The communication in your last issue from Dr. Lionel Tayler which is headed as above and presented as a criticism of "the Eugenists" will, I fear, have conveyed to the uninitiated a wrong impression of the work of the Eugenics Education Society, of which I have the honour to be President, and on the council of which Dr. Tayler is a valued member. This is my excuse for writing to you.

To begin with, there is, strictly speaking, no such class, section, or body as "the Eugenists." There are, indeed, numbers of persons who are interested in, and are seeking to promote, the betterment of the human race—many of them in England and our Colonies, many of them in the United States and on the Continent of Europe—but, like most inquirers after truth, these individuals greatly differ amongst themselves in regard to the best methods of furthering their common purpose. Dr. Tayler is, accordingly, fully entitled to his own special views, and to criticise the views of others.

Dr. Tayler is reported (and, I have no doubt, reported accurately) to have "hinted that the Eugenists' favourite theory as to the pairing only of the fittest had been overdone, and that human love, under healthy conditions, was, after all, the best racial guide."

I cannot think that this "hint," which is obviously intended as a caution, is justified by the facts, for, speaking from a large personal experience, I have never yet met with anyone calling himself a "Eugenist" who did not hold that a marriage entered upon without mutual love would be likely, sooner or later, to end in disaster. The contrary view is, I know, sometimes attributed to us, but only in the "fugitive pieces" of those chartered libertines of buffoonery who indulge from time to time in cheap jokes about "stud-farms" and "marriage by the police or under police supervision." I endeavoured to set forth my own views in a paper which I contributed last October to the "Nineteenth Century and After," from which I ask leave to quote:—

"With an eye both to domestic happiness and to the progress of humanity, Eugenics urges the importance of 'right selection' before marriage, holding that without such selection the vows of love and fidelity exchanged at the altar may, and probably will, turn out to be a mockery. For the same reason Eugenists protest against the giving in marriage of young women by their parents and guardians with a view to secure what is vulgarly called 'a good match.' A really 'good match' requires not only mutual love, but common or reciprocal interests in life; that is to say, either that both parties should be interested in the same things, or, better still, that each should be interested in the 'things' of the other while cultivating separate interests of his or her own. This is the key to that intimate association and friendship which stands the test of time. This it is when there are added to it the things of the Spirit that make a happy home. Eugenics lays great stress on the happiness of the home, for happy homes make happy children, and happy children have far better chances than unhappy children of growing into good and useful citizens."

Dr. Tayler is further reported to have said that "he is not in favour of divorce, because divorce, directly and indirectly, is destructive of parental duties and claims." I doubt very much if any of Dr. Tayler's colleagues on the council (none of whom are bound by religious tenets to regard marriage as indissoluble on whatever ground) would agree with him in this. Most Eugenists hold that when a defect ascertained to be heritable, such as intermittent insanity or syphilis, is present in either of the contracting parties the marriage ought not to take place, and that if it has already taken

place it ought to be capable of being dissolved at the instance of the party from whom the defect was concealed. In truth, such concealment would be a fraud on marriage, which, according to the Church of England, was "ordained for the procreation of children and for mutual society, help and comfort."

If what I have just stated were made the law we should hear less of divorce, for inquiries into physical antecedents and family histories, once accepted as a matter of routine, inquiries into tastes, temperaments and pursuits would follow, and so ill-assorted unions would be more rare.

Apparently Dr. Tayler would go the length of repealing the Divorce Act of 1857 without putting anything in its place. I would respectfully ask him whether such repeal would not be retrograde legislation, seeing that it would inflict cruel hardship on thousands of husbands or wives, and, by entailing misery in many cases on the children to be born of them, be inimical to the welfare of humanity.

Yours faithfully,
MONTAGUE CRACKANTHORPE.

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From **DAILY SKETCH,**
Withy Grove, Manchester.

HIGHER MORALITY.

Eugenist Says Women
Excel.

POOR OPINION OF HIS SEX.

Marriages Should be Under State Regulation.

The attitude of the Eugenists—the people who believe that if a system of scientific breeding is good for the lower animals it must be good for man—towards divorce was outlined to the Divorce Commission yesterday. Mr. Montague Crackanthorpe, K.C., the president, was deputed to give evidence by the society.

"There are only three ways of looking at divorce," he said. "First, the marriage is a sacrament, and on that account indissoluble; secondly, marriage is a civil contract, dissoluble at the instance of either party by reason of certain acts or defaults of the other party; thirdly, there is the Eugenic theory, and since marriage is an institution for, amongst other things, the continuance of the human race, it should be subject to regulation by the community. For the community must be either helped or hindered in its progress by the children that are born into it."

He summed up Eugenics epigrammatically: "One-half of its teaching is concerned with the production of the fit; the other half with the elimination of the unfit."

The eugenic position with regard to certain defects, he said, was that when any of these defects were known to be present in either of the parties before marriage, the marriage ought not to take place; and that if it had taken place, and the wife was not past child-bearing, it ought to be dissoluble at the instance of the notmarried, unblemished party.

THE SEXES CAN NEVER BE EQUAL.

Asked for his views as to insanity in its relation to divorce, he said: "It is quite true that, in a sense, a partner is taken for better or worse, but we do not take the children who are propagated for better or for worse. To propagate children for worse is to commit a wicked and selfish act, which must hinder the progress of the community."

"What is your view with regard to the equality of the sexes?" asked the chairman. "Biologically, the sexes are not equal and never can be made equal. I agree with what Sir James Crickton Eyre said upon that yesterday. It is the only point on which I do agree with him. The sexes start equal, but when they attain the age of adolescence they differentiate."

Answering the Earl of Derby, Mr. Crackanthorpe said his ideal was that marriage should only be permitted after a certificate of fitness had been obtained. He admitted that the effect of such a certificate might be to throw on the world more illegitimate children, who would have less chance of being well looked after.

With regard to the age at which marriage was permissible, Mr. Crackanthorpe said he thought it should be raised to 18 in the case of women, and 17 in the case of men.

Mr. Crackanthorpe made a novel suggestion in answer to a question by Sir Lewis Dribbin, who said: "You have spoken of the inadequacy of lunatics. What would you suggest in their place?"

"The authorities might publish them in the *London Gazette*, or I would suggest an official *Married and Single*," he replied.

NO ADVOCATE OF EARLY MARRIAGE.

"I believe in the charity of women," the witness said in answering negatively the question as to whether the prevention of early marriages give rise to still worse evils.

"Do you believe in the charity of men?" he was asked, and with emphatic candour he replied "No."

Mr. F. W. Mott, physician at Charing Cross Hospital, and pathologist of the London County Council asylums, who had been nominated by the Eugenic Society to give evidence on insanity and insanity, made an attack on a belief which has been held firmly for many years.

He said he thought drink had a pernicious effect on people who were mentally unstable, and was a great cause, no doubt, of people being brought into the asylum. A very small quantity was enough to make them unbalanced and insane. The post-mortem examinations showed, however, a difference in the effects of alcohol on the mentally stable and the unstable. He often asked those at the hospital to bring their children and grandchildren, and he was surprised to find they were healthy children. In fact, he could not think that alcohol was a cause of feeble-mindedness in one generation, but if it existed for three or four generations then disease manifested itself.

Mentioning a notorious police case, that of Jane Ockford, who had been convicted 420 times, he said that her brain appeared to be perfectly normal.

Dr. G. H. Savage, the famous mental expert, said that he had addressed questions to a number of medical officers of asylums as to whether insanity was a justifiable ground of divorce, and of the 81 replies that he had received 51 were favourable, under conditions, 29 against, and two indifferent. Of the objections some were a trifling grounds, and others were based on the uncertainty of the incurability of insanity.

The Chairman: Supposing a husband brought about his wife's madness, would you let him have a divorce?—I should not.

Dr. Savage concluded by observing that there were scarcely sufficient grounds, in his opinion, to justify an alteration in the law.

Dr Heron

Subject: Memor. Physics & Environment

| Paper | Date | Year | |
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| B. M. J. | June 4 | 1910 | also reviews Elderly Pearson Mem |
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| Dundee Advertiser | July 16 | - | D.Sc. |
| Nature | Dec 28 | 07 | Insanif Mem |
| B.M.J. | Aug 2 | 1908 | Insanif |

by calling some member of its committee, or its secretary, or by producing its books, and for this purpose the case was adjourned. When the case was called on next day neither the practitioner nor his legal representative appeared and no such evidence was tendered, but, instead, a letter from the practitioner was read requesting that his name should be removed from the *Medical Register*. It was, of course, impossible to grant this request with an unfinished hearing of the charge against him hanging over his head, and the Council decided to adjourn the further consideration of the case to the November session, in order to give the respondent the opportunity of bringing additional evidence in answer to the charge.

The action of the British Medical Association in appearing as complainants before the General Medical Council in these cases was taken in pursuance of the decision of the Representative Meeting in 1906, confirmed by the Representative Meetings in 1907 and 1908. The Council deputed to the Central Ethical Committee the duty of acting in this respect on behalf of the Association. The cases just heard were the first brought to the notice of the Committee in which it was satisfied that the circumstances called for its intervention.

The case at Sheffield was reported to the General Medical Council by the medical officer of health and the coroner. The answer returned on behalf of the Council was to the effect that though there was a *prima facie* case for investigation, the requirement that the facts must be brought formally before the Council by a complainant would be insisted on. The case had, as will readily be understood, excited a great deal of attention in Sheffield, and the medical profession in that city thought that for the honour of the profession some action should be taken, but felt also that if any individual member of the profession came forward as a complainant he would lay himself open to the charge of professional jealousy, and that even if the general body of the profession in Sheffield through the local Division of the Association deputed some person to act as complainant a similar charge might be made. The decision of the Representative Meeting that the Central Council of the Association, as representing the whole body, should be authorized to act provided a solution of the difficulty, and the investigation of the circumstances was accordingly undertaken by the Central Ethical Committee. The case was carefully prepared by the Medical Secretary and the Solicitor to the Association, and ably presented by the former to the Council, with the result shown in the report published in the SUPPLEMENT. It is perhaps unfortunate that there is no officer of the General Medical Council who can discharge in relation to it the duties of a public prosecutor in cases raising the larger general interests of the public and of the profession. But so long as the Council adheres to the interpretation of its powers referred to above, the honour and interests of the profession will be best safeguarded by the British Medical Association continuing the policy of acting as complainant in suitable cases before the General Medical Council.

ENVIRONMENT AND HEREDITY.

As is well known the staff of the Galton Laboratory for National Eugenics has recently devoted a good deal of attention to researches having for their aim the determination of the parts played respectively by environment and inheritance in shaping the mental

and physical destinies of the next generation. Two further contributions to this subject have just been issued¹—one, by Mr. David Heron, deals with the influence of defective physique and unfavourable home environment on the intelligence of school children; the other, by Miss Elderton and Professor Karl Pearson, treats of the influence of parental alcoholism on the physique and ability of the offspring.

Mr. Heron's data comprise material collected in fourteen London elementary schools under the instructions of the Education Committee of the London County Council, who generously placed the facts at the disposal of the Galton Laboratory. Mr. Heron acknowledges his indebtedness both to the committee and to Dr. Kerr for ready help and advice in connexion with the data.

As the problem was to measure the relation between ability and various conditions, it was important to consider how far the classification of intelligence was satisfactory. The variations in the percentages of children placed in the different classes of intelligence at individual schools were so wide that the scale adopted could not be regarded as a good one. For instance, the percentage of children classed as "brilliant" varied from 3 to 33 among the boys, and from 1 to 33 among the girls. Evidently different teachers attached different meanings to the term "brilliant." The author remarks: "It will be seen at once that from this standpoint this pioneer survey has a most valuable lesson to teach us. There must be a preliminary standardization of the teachers who are called upon to estimate the intelligence of their pupils. It is idle to assert that there is no such thing as 'general intelligence'; it may be difficult to find a satisfactory means of measuring it, but measure it we must if we are to obtain any useful facts from these school surveys."

Owing to the non-uniformity of the scale, it was necessary to analyse the returns from individual schools, thus diminishing the size of the sample and increasing the "probable errors" of the constants deduced. The correlation between mental capacity and the following characters was determined for each school separately—namely, intelligence, with age, height, weight, condition of the teeth, condition of the clothing, state of nutrition, state of cleanliness, condition of the cervical glands, tonsils, adenoids, and power of hearing; the relationship between age and various physical characters was also measured. Although some of the coefficients of correlation between mental capacity and environmental conditions are so large in comparison with their "probable errors" that some degree of significant relationship might be predicated, yet their absolute magnitudes are so small, and they vary so much from school to school, that but little weight can be attached to them. For instance, the correlation between the state of nutrition and mental capacity for the girls in School 2 is $+ .22 \pm .05$, a significant positive value; for the boys in the same school, however, the coefficient is $- .16 \pm .04$, actually of opposite sign! The value for girls in School 12 is $- .14 \pm .03$. Evidently positive conclusions are not to be based upon such results. The author accordingly holds that the results of this survey do not support the belief that the home environment, so far as it can

¹ *The Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children*, by David Heron, M.A. (Pp. 60.) *A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring*, by Ethel M. Elderton, with the assistance of Karl Pearson, F.R.S. (Pp. 46.) *Eugenics Laboratory Memoirs*. London: Dulau and Co. 1910.

be measured by the characters discussed, exerts any marked influence upon the intelligence of school children. He is disposed to believe that this is due to there being, in fact, no close relationship between environment and intelligence. It may be asserted that the result is due to the imperfection of the data, that better material would have yielded a more consistent and definite answer. Mr. Heron might, perhaps, legitimately retort that the *onus probandi* is with the objector. We think those familiar with conditions of life in the slums might differ from certain statements of Mr. Heron. He remarks that "it may be presumed that the home environment is the same for both boys and girls," but the presumption is not, perhaps, warranted. We are rather disposed to think that, in general, the environment of the girl may be less satisfactory than that of the boy from the same home, especially when the family contains young children. After school hours a girl sometimes has to act as a domestic helper and nursemaid to her younger brothers and sisters—duties not so often delegated to the schoolboy. Thus there may well be a sexual difference in the environment of members of the same family.

In the second memoir under notice Miss Elderton and Professor Pearson deal with the statistics of the Edinburgh Charity Organization Society's Report and with a manuscript account of the children in the special schools of Manchester provided by Miss Mary Dendy. The latter material is, of course, not a random sample, since at least one child in each family is mentally defective.

The analysis is conducted on the same general lines as that of Mr. Heron's paper. The results may be summarized in the following terms:

1. There is a higher death-rate among the offspring of alcoholic than among those of sober parents. This difference is somewhat more marked in the case of an alcoholic mother than when the father alone drinks. It is sensibly higher when the mother drinks "in bouts" than when she is a habitual drinker. This would appear to suggest that the cause is rather a greater frequency of accidents and gross carelessness than a toxic influence. Alcoholic parents appear somewhat more fertile than sober ones, the net family of the temperate being hardly larger than the net family of the alcoholic.
2. There is a very small but possibly significant correlation between alcoholism in the mother and poverty of physique in the child. There is no significant relation between paternal alcoholism and the height or weight of the child.
3. The wages of the alcoholic as contrasted with those of the sober parent show a slight inferiority compatible with the employers' dislike of an alcoholic employee, but wholly inconsistent with a marked mental or physical inferiority in the alcoholic parent.
4. The general health of the children of alcoholic parents appears to be slightly better than that of the children of sober parents. This may be partly due to the weeding out of delicate children by the higher infantile death-rate in the former class.
5. There is no evidence that parental alcoholism is the source of mental defect in children.
6. There is no measurable relation between the intelligence of children and the alcoholism of their parents.
7. The same conclusion applies to the vision of children and to the frequency of disease of the eyes or eyelids.

We have quoted most of Miss Elderton and Pro-

fessor Pearson's conclusions without comment. That they have adopted the best, indeed the only adequate, method of statistical analysis is, in our opinion, beyond doubt. Whether the data they have used are sufficient to support a final judgement on this matter is a question on which we have no intention of entering. One remark, however, we think it well to make. The large number of persons who are probably even now girding on their armour with the intention of smiting Professor Pearson and his pupils should realize exactly what these investigators are teaching. They suggest that parental alcoholism, bad housing and other environmental evils do not produce large effects upon the next generation. They do not deny that these things are evils; they simply doubt whether they are evils visited upon the children and to the third and fourth generation. Even if these views merited universal acceptance—as to which we express no opinion—it would still be our duty to strive at least as hard as at present for the amelioration of environmental conditions. Hunger, filth, and alcoholic excess may not affect the intelligence and physique of the rising generation, but, beyond all question, they materially affect the health and happiness of the generation in being. If an imperfect or secondhand acquaintance with these memoirs were to lead to any weakening in the struggle to secure better environmental conditions, much harm would have been done—harm which, we think, would be deplored by no one more heartily than by the authors of the papers themselves. We have no doubt that the publications of the Eugenics Laboratory will be received, by the medical profession at least, with the respect which is the proper acknowledgement of all genuine scientific work.

THE CROONIAN LECTURE.

IF one were asked to name what might be considered the most essential common characteristic of living matter—or, indeed, of all forms of matter—the answer would unhesitatingly be summed up in the single word, "change." The idea has long been associated with biological phenomena, and has been given concrete expression on numerous occasions. Physical entities in comparison gave the impression of the immutable, and inspired a confidence as in something absolutely stable and steadfast. It is gradually being borne in upon us, however, that the elusive, impenetrable element of change is no less characteristic of the one than of the other, and that the only difference is a matter of time or of rapidity of action as measured by the human span. Biologically, change always suggests environment, implying that the process is measured or estimated not so much with reference to the immediately previous state of the individual as with reference to the innumerable other individuals with which it is surrounded and with which its whole life interacts. The effect, on the whole, is of importance incomparably greater than that on the unit. At the same time the converse is not without its importance and interest, and it is this aspect of the phenomenon which is most commonly studied. It formed the subject of the Croonian lecture delivered before the Royal Society on May 26th by Professor Klebs of Heidelberg, the title being "Alterations of the Development and Forms of Plants as a Result of Environment." Two examples in particular were chosen, one from the lower plants, another from the flowering plants. The well-known fungus *Saprolegnia* shows three distinct stages of development, which, under ordinary circumstances, follow each other with regularity till the

[3rr.]

THE MORNING POST,
SATURDAY, APRIL 9,
1910.

The Francis Galton Laboratory for NATIONAL Eugenics, which is under the control of the University of London, is issuing a series of very careful and accurate memoirs upon certain problems of heredity and environment which have their own profound effects on the national life. To-day is issued a memoir by Mr. DAVID HERON, which deals with the influence of defective physique and unfavourable home environment upon the intelligence of school children. We have not the time and space to deal now with all the facts which are gathered together in that memoir nor to discuss fully their importance. That such investigations are important, that they are indeed of the very highest importance, few will be found to deny. All are agreed to-day that social problems can be solved only when they are understood, and that they cannot be fully understood until all the facts are known. Of such problems that of education is not far from the most important. When we start to collect the broad facts which must be taken into account by systems of education we are confronted by the difficulty of determining how far a man is the product of heredity, how far, that is, his qualities are those of his ancestors and how far he is the product of his environment, which is, after all, only another name for education in its widest sense. It used to be assumed by those who had only an imperfect knowledge of the rules which men of science have found to govern the transmission of qualities that environment was the one factor important to the welfare of the race. Of late years they have gradually come to understand that very much more important are those qualities which are inborn and which environments can only suppress or modify with difficulty. We cannot, indeed, over-emphasise the truism that the child is father of the man. We have, however, been reminded of the older and more elementary platitude that the man is father to the child. So far as we have been able to gather in a somewhat cursory reading of Mr. HERON's monograph, he has found at every step this difficulty of deciding between the relative effects on the life of a child of his heredity and his environment and education. Indeed, he notes that one of the objects of the memoir is "to illustrate the difficulties that arise in attempting to make reliable and comparable observations on school children," and goes on to explain that "Great Britain is a country of 'local races'"; that almost all qualities are markedly differentiated among these racial types; that all sorts of qualities are more affected by the pedigree of the children than by their environment. All this points to the essential fact that race-building is more fundamental even than education. By race-building we mean the encouragement of families whose good qualities are already known and tried and the gradual elimination of families and stocks of whose bad qualities there can be no doubt. This is—broadly put—the object which Sir FRANCIS GALTON had in view when he founded the laboratory which is doing such excellent work.

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From

MORNING POST,

346, Strand, W.C.

9 APR 1910

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From Volts Dly Express

28.3.10

PRIMOGENITURE ASSAILED

Eugenists Assert that the First-born is Usually Inferior.

The system of primogeniture which has for so long prevailed in this country is being mercilessly assailed by the Eugenists. In view of the fact that it is a peer's eldest son who succeeds to his title and his right of veto over popular legislation, it is interesting to notice that the first-born appears, generally speaking, to be not the flower but the black sheep of the flock.

The point is raised in a letter to "The Times," in which Sir Francis Galton observes that, in the case of the House of Lords, the claims of heredity would be best satisfied if all the sons of peers were equally eligible to the peerage and a selection made among them, late researches having shown "that the eldest-born are, as a rule, inferior in natural gifts to the younger-born in a small but significant degree."

These views were fully endorsed by Dr. David Heron, of the Eugenics Laboratory for National Eugenics at University College, who was appealed to for an ampler statement of the facts. It was pointed out to him that the teaching of Eugenics as to the inferiority, as a rule, of the first-born was directly opposed to the popular idea that the "best come first."

"Popular opinion is always wrong," said Dr. Heron. "The first-born in a family is more likely to be insane, tuberculous, or criminal than the others. It follows, therefore, that the tendency to diminish the size of families increases the average number of such individuals in the community."

Dr. Heron referred his interviewer to the conclusions arrived at on this subject by Professor Karl Pearson and expressed by him in a recent lecture at the Eugenics Laboratory.

"If our observations are correct, and I believe them to be so," said Dr. Pearson, "then the mental and physical condition of the first and second born members of a family is differentiated from that of later members. They are of a more nervous and less stable constitution. We find that the neurotic, the insane, the tuberculous, and the albinotic are more frequent among the elder-born. Dr. Goring's results for criminality show the same law."

"The result of this law is remarkable. It means that if you reduce the size of the family you will tend to decrease the relative proportion of the mentally and physically sound in the community. You will not upset this conclusion in the least if, as I suspect, the extraordinarily able man, the genius, is also among the early-born. For you will not lose him if you have a larger family, although you will lose the sounder members if you curtail it."

Sir F Galton &

f.6r

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THE CUTTING ATTACHED IS FROM:—

The letter of Sir F. Galton, a great authority on heredity, in which he stated that experience proved that the eldest was not generally the best of the family, has led to a good deal of discussion. Dr. David Heron, of the Galton Laboratory for National Eugenics at University College, confirms the view of Sir F. Galton. He declares that the firstborn is more likely to be insane, tuberculous, or criminal than the others. He goes so far as to say that the first two of a family were of a more neurotic and less stable constitution than the younger members of the family. It is clear, therefore, that the practice of primogeniture does not secure us even the best men among a hereditary caste. It would seem that if we are to retain the principle of heredity it should be the youngest sons, and not the eldest, who should be made Lords of Parliament. It would be rather amusing to see how such a proposal would be received in the House of Lords, and it is to be hoped that some childless Radical peer will make it.

X
P.T.O.

Sir J Galton 67r

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From

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28.3.10

INFERIORITY OF THE FIRST- BORN.

WHERE POPULAR OPINION IS WRONG.

The glamour of primogeniture, so long maintained by the law, is in danger of being destroyed by science—at all events, by the science of Eugenics, which roundly declares that the first-born is not the flower of the stock.

The point is raised in a letter to "The Times," in which Sir Francis Galton observes that, in the case of the House of Lords, the claims of heredity would be best satisfied if all the sons of Peers were equally eligible to the Peerage and a selection made among them, late researches having shown "that the eldest born are, as a rule, inferior in natural gifts to the younger-born in a small but significant degree."

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"If our observations are correct, and I believe them to be so," said Dr. Pearson, "then the mental and physical condition of the first and second-born members of a family is differentiated from that of later members. They are of a more nervous and less stable constitution. We find that the neurotic, the insane, the tuberculous, and the albinotic are more frequent among the elder-born. Dr. Goring's results for criminality show the same law."

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f.8r
Sir F Galton

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From

DAILY NEWS,
Bouverie Street, E.C.

28 MAR 1916

THE FIRST BORN.

Eugenism (if that is the correct term) has burst into politics, and the politics of the moment, with a death sentence on the Lords. Primogeniture, it tells us, is a flying in the face of science. "The eldest born," according to Sir Francis Galton, "are as a rule inferior in natural gifts to the younger born in a small but significant degree," and Dr. Heron explains what "a small but significant degree" is by adding that "the first born in a family is more likely to be insane, tuberculous, or criminal than the others." The House of Lords is a Chamber of first-borns of first-borns, so that the real miracle is not that it is as bad as it is but that there is any sound spot left in it. After this the talk of "reform" becomes an ill-timed jest, and Lord Rosebery's pleasant scheme (for selection of legislators out of degenerates by degenerates) sacrilegious trifling. Eugenism, however, is not content merely to annihilate the Lords. "Popular opinion is always wrong," says Dr. Heron, even when it agrees with Dr. Heron apparently. This is a little unfortunate, for even the eugenicist, we suppose, has to work through popular opinion. Eugenism, if Dr. Heron is right, is on the horns of a dilemma: to be of any use it has to become popular, and as soon as it becomes popular it must be wrong. Perhaps eugenicists might, for the sake of their own science, be a trifle less draconic.

f9r

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The Clipping attached is from

THE OBSERVER.

27 MAR 1910

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EUGENIC VIEW OF PRIMO- GENITURE

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Chis. J. Galton *f. 10r*

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From **DUNDEE ADVERTISER,**
7, Bank Street, Dundee.

16 JUL 1910

Honour to Perth Savant.

Mr David Heron, M.A., B.Sc., of the Galton Eugenics Laboratory, London, has received intimation that the Senators of St Andrews University have decided to confer on him the degree of Doctor of Science. Mr Heron, who is a native of Perth, was a distinguished student of St Andrews University, where he graduated five years ago. Immediately afterwards he received an appointment as a research student in eugenics in London University under Professor Karl Pearson, and the work which he has done there has attracted wide notice at home and in Germany and America. Mr Heron has published several important reports on his researches, the subjects being "The Birth-Rate and Social Status," "The Inheritance of Insanity," and "Investigations on the Mental Capacity of School Children," the last of which, it will be remembered, developed the somewhat startling theory that alcoholism in parents had no apparent ill effects on their offspring up to the time they left school. He submitted as his thesis for the doctorate an account of his investigations generally, and it is interesting to note that the subject of eugenics is still so little known in this country that the greatest difficulty was experienced in securing an authority competent to pronounce on the work submitted.

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From

THE PRINCIPLES OF EUGENICS.

LECTURE BY DR. SALEBY.

There was a numerous audience at the Working Public Hall on Sunday evening, when Dr. C. W. Saleby, F.O.S.E., delivered the first of two lectures on Eugenics. His subject was, 'The principles of Eugenics.'

Dr. Saleby explained at the outset that Eugenics was simply a Latin or Greek name for race-culture. The name was applied by the Greeks to a racehorse, or some such creature of good descent. The first principle of Eugenics was that it was the quality of the people which mattered. The vital issue for any nation at any time was the quality of its life and its future life, the quality of its parenthood, children, etc. There was no wealth for an individual or a nation, but life. The importance of legislation, of war or peace, industry and education—all things depended absolutely upon the quality of the people which they produced, or failed to produce, or which they destroyed. Darwin showed that living races were altered in the course of the ages, by choice, or, as he said, the selection of members of each generation to carry on the race. This was called natural selection, and the idea of applying the Darwinian principle of natural selection to mankind was a principle of Eugenics. Nature's destruction of the unfit meant the survival of the fit, and what they might call natural selection of the fit, or natural rejection of the unfit. This process was going on everywhere, and at all times. In other words, Nature proceeded by a selective birth rate, and natural selection was undoubtedly a process of slaughter. Eugenics did not involve killing, but proceeded by a selective birth rate, endeavouring to control the great question of parenthood and birth, so that the right person should be born.

ILLUSTRATIONS FROM HISTORY.

He submitted for the audience's consideration some historical illustrations, as evidence of the validity of Eugenics. In Rome, Spain, France and Ireland, and many another country, terrible consequences had happened, and, in the case of Ireland, were still happening, because the principles of Eugenics had not been carried out. Rome declined because she practised 'disgenesis' instead of Eugenics, the best blood of the nation being lost in the frontier wars. In Spain vast destruction of the most progressive people was caused by the Inquisition, and by studious persons going into the monasteries. In the case of France there was a stationary population. At the time of the Reformation and later, France systematically expelled from her borders the Huguenots, whom many considered to have been her best blood. Then, too, there was enormous destruction of the best manhood of France in the Napoleonic wars. The race now was, on the whole, less virile than it was before Napoleon's campaign. These were instances to suggest that the principles of Eugenics, when not applied, or applied upside down, were destructive to a nation.

IRELAND'S EXAMPLE.

In the case of Ireland, he said the only process which would save Ireland was a process which would arrest the emigration amongst the youths of both sexes (applause). The Irishmen who were left behind, alas, were the remains of a race; those who had not the energy, vitality, courage or initiative to get out of the appalling conditions which still prevailed there. That was the question underlying all the other questions of Dolus Dictators, Molly Maguires, etc. (laughter). The chief objection to the House of Gramophones, a House of Commons, as it was called, was that those fundamental principles were not recognised. Speaking of heredity, Dr. Saleby said if that were a myth, there was no case for Eugenics. A new race could not be made simply by education, as this was only providing environment for what was there. The more they educated, the more they brought out the natural difference between people. When people said education could do everything, they forgot heredity. The idea of Eugenics was to get the right kind of children born, and then get the best conditions for them. In those few words lay the whole of statesmanship (applause).

Next Sunday evening Dr. Saleby will lecture on 'The methods of Eugenics.'

Dr. Saleeby 15r

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From *Pall Mall Gazette*

10 FEB 1910

THE METHODS OF EUGENICS

DR. SALEEBY'S PROPOSALS.

Dr. C. W. Saleeby discussed the "Methods of Eugenics" before the Sociological Society yesterday evening, the Rev. Professor Caldecott being in the chair.

After defining the terms he employs, Eugenist, Sysgenics, Positive and Negative Eugenics, etc., the lecturer discussed in turn various methods which are to be:—

- (1) Rejected,
- (2) Questioned,
- (3) Accepted in Positive Eugenics,

which he defines as the encouragement of parenthood on the part of the worthy, and in Negative Eugenics, the discouragement of parenthood on the part of the unworthy. He summarily rejected the "stud-farm," "mating by police," and anything else that involves the destruction of marriage; as also the lethal chamber, and the encouragement of infant mortality, eugenics being selection for parenthood not selection for life, and these latter being not eugenics but murder.

Dr. Saleeby was dubious and guarded as to bonuses for children, and was inclined to accept the recent criticism by Dr. Squire Sprigge, editor of the "Lancet," of marriage-certificates.

The methods the lecturer accepted included: Marriage duly exalted by the eugenic ideal, the endowment of motherhood, "not by the State, but by the corresponding fatherhood," and "education for parenthood of youth of both sexes, appealing to both through religion, to boys especially, perhaps, through patriotism, and to girls especially through the ideal of womanhood."

The Control of the Unfit

Under Negative Eugenics, Dr. Saleeby repudiated all proposals for mutilative surgery, but advocated sterilisation of the grossly unfit by harmless and practicable methods, possibly by the Röntgen rays, in the near future. He also advocated segregation, the severer measure, where the individual is unfit, even apart from possible parenthood, to be a member of the community. Finally, he argued that, in every way, we must "Protect parenthood from alcohol," this being "the motto of sane temperance reform."

Amongst those who contributed to the discussion were Professor Mark Baldwin, the distinguished American psychologist, who had a word of eugenic criticism for Mr. Roosevelt's desire for large families, irrespective of quality; and Mr. Macleod Yearsley, F.R.C.S., who, as an aural expert, quoted some scandalous cases of deaf-mutism carried on through several generations by, for instance, the marriage of deaf mute cousins.

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From

Robert News

23/12

METHODS OF EUGENICS.

DR. SALEEBY'S SECOND LECTURE.

At the Public Hall, Woking, on Sunday evening, Dr. C. W. Saleeby delivered his second lecture on Eugenics, entitled 'The methods of eugenics.' There was a large and appreciative audience.

For convenience, the speaker said, he would distinguish three different orders of Eugenics, viz., to encourage parenthood on the part of the worthy; to discourage parenthood on the part of the unworthy; and if there were agencies at work which tended to make a worthy stock unworthy, they should set themselves to combat those agencies. The first of those he would call positive Eugenics, the opposite could be called negative Eugenics, and the third might be called preventive Eugenics. With regard to positive Eugenics, there were two suggestions he would offer for their consideration. One was a suggestion already practised in France, and which Mr. Lloyd George put into practice in a small degree in this country, by allowing a rebate on Income Tax for children. From an Eugenic point of view, children should be welcomed everywhere and always by their parents. With regard to marriages, he said it seemed to be a humane form of selection for parents of the future, where young people chose each other, rather than where marriages were arranged. He was convinced that under natural conditions this choice was Eugenic. Marriage, therefore, was to be an expression of natural love and selection of young people. Their business was to seek to reform marriage along those lines, partly by law, partly by legislation, and partly by public opinion, and his idea was that public opinion was to be the greatest factor in that matter. Marriage for money was regarded as a thing directed against the very principles of social continuance (applause).

THE PROBLEM OF THE FEEBLE-MINDED.

Another principle of positive Eugenics would be that of education for parenthood, and they would slowly come to this. Then there was the method of marriage certificates whereby people would be examined in mind and body to ascertain if their health were satisfactory for them to marry. He did not think this practicable, but it would eventually become a recognised social practice to make these inquiries. Another method of negative Eugenics was the method of segregation, which meant that persons unfit to become parents, the defective-minded, should be separated from the rest of the community. Segregation was not imprisonment or punishment for those persons who were not criminals or offenders in any sense. They were patients, and segregation meant taking care of those people, who would then be protected from the community, and the community from them. The Poor Law Commission Report said that this thing must end, and if we had any statesman in England it would have been ended already (applause). But because there was no political capital to be made out of it by any party, nothing was carried out. This, however, would be done very soon. With regard to preventive Eugenics, he would mention three racial poisons. One was malaria, which did not affect this country much, but there were two racial poisons in this country—lead and alcohol. Lead was a trivial poison, but alcohol was far greater. This had been clearly proved by every kind of inquiry to be a cause of racial poison. Healthy stocks, if sufficiently alcoholised, would be converted into degenerate stocks (applause).

Lastly, the lecturer said he believed that the quarrel between persons who believed entirely in environment and the persons who believed entirely in heredity, was to be solved partly by recognising that each was a half truth, and the truth was only composed by taking them both together (applause).

At the close Dr. Saleeby answered questions put to him by members of the audience.

Philip Thrain

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The Clipping attached is from

THE CHRISTIAN COMMONWEALTH,

73, Ludgate Hill, E.C.

The Methods of Eugenics.

On Thursday evening the City Temple Literary Society listened to a remarkable lecture by Dr. C. W. Saleeby, well known as an authority on race culture, who described "The Methods of Eugenics."

Dr. Saleeby has a striking personality, and whilst his delivery enforced attention, his subject had in it matter of moment enough to compel urgent concentration.

He sought to take in hand an advance in human evolution. He would, to improve the race, co-operate with the forces of nature, and would deliberately exercise at least as much care (by different methods, of course) in the procreation of human beings as a breeder of birds would bestow upon his cause.

After examining the factors of environment and heredity, and the transmission of human qualities, good and bad, he declared the orders of his eugenic creed to be:—

First—Positive.—That we must encourage parenthood on the part of the worthy; *Second—Negative.*—That we must discourage parenthood on the part of the unworthy; and *Third—Preventive.*—That we must prevent the operation of those agencies at work in the community which tend to make stocks which are healthy and worthy, unhealthy and unworthy.

Here was the doctor's gospel of eugenics nutshellled. He sternly discountenanced the crude criticisms passed upon eugenics that it meant mating by the police, abolition of fixed marriage, revival of infanticide, and introduction of dog-breeders' methods, and he proceeded to discuss the means by which effect might be given to the objects of eugenics, which he insisted had passed out of the domain of the academic, and had become thought-compelling and vital.

Stated briefly, he pleaded for education for parenthood, the teaching of elementary principles to children, improved economic conditions, and arrest of disgenic processes; and for that care to preserve the lives of children born fit which we give to the feeble-minded. Cease, he said, treating flag-waving as patriotism, and substitute for it a sense of the honour attaching to worthy parenthood and dishonour to unworthy parenthood—the true pride of race. Be concerned for the period when the baby's future mother is choosing who shall be its father. Make room for babies of worthy couples, even in flats and institutions. Segregate the radically unfit, but maintain the highest standard of humanitarian treatment. In cases where segregation might limit the scope and utility of a life capable of good, sterilisation might be requisite.

Not the right to live is questioned, but the right to become parents. He had no sympathy with the dictum, "Thou shalt not kill, but need not strive officiously to keep alive." There is no question of the painless extinction of the defective, but the gradual raising of the standard of worth on the part of the fit who contribute as parents to the race, under a system by which the higher law of love will mitigate the hardships of the operation of the law of the survival of the fit.

That the lecture was thoroughly appreciated was shown by the animated discussion which followed.

PHILIP THRAIN.

See 2nd Edition

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From **WESTMINSTER GAZETTE,**
Salisbury Square, E.C.

JUN 10

RACIAL POISONS.

"Racial poison" is a very useful term to distinguish poisons which may or may not affect an individual qua individual from those which, through the individual, affect the race. It was introduced some time ago by Dr. Saleeby, but unfortunately there have been signs that the full significance of a distinction so important in eugenics has not been realised. He has therefore found it necessary to define a racial poison in terms that cannot be mistaken. It is "a substance which, whether or not injuring the individual who takes it, is liable to injure the race of which he or she is the trustee." In one sense strychnine is a racial poison, for if it kills the individual he has lost all further opportunities of increasing or improving the race. We all more or less unconsciously take adulterants, such as boric acid, in our food, but there is no evidence to show that these have a deleterious effect upon the parenthood of an individual. But if a mother saturates her system with morphine she cannot do so without saturating the system of her unborn child. Morphine, indeed, is one of the four great racial poisons, the other three being alcohol, lead, and the poison of a curse that shall be nameless. Temperance reformers and others who are engaged in combating the various evils of our social life should find much material of a valuable character in the papers on the subject of racial poisons which Dr. Saleeby is contributing to the "Eugenics Review," for it is upon these four poisons mentioned that eugenicists are concentrating their energies in their campaign. These papers are sometimes instructive in quite unexpected ways. For instance, attention is drawn to the case of the individual possessed of a naturally defective nervous organisation. The actual amount of alcohol taken may be ridiculously small, but to him or her it is certainly excess. Here "intemperance is not a sin, but a symptom. In such cases to be scientific is to be charitable. The person in question is a patient, and alcoholism is one of his symptoms, as pain is one of the symptoms of a fracture." It seems to us that Dr. Saleeby has put his finger on the one weak spot in the work of our eugenicists when he condemns the restriction of official eugenic research to the phenomena of transmission. After all, we live in a practical world. And if we go, as we must, to the politician and ask him to stay the transmission of degeneracy he will naturally ask for information as to the origin or prime cause of degeneracy. That information the eugenicist must be prepared to give with no uncertain voice.

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From

DAILY SKETCH,
Withy Grove, MANCHESTER.

16 JUL 1910

PARENTS IN THE MAKING.

Quixotism of Girls who Marry Men to Reform Them.

"UNBORN CHILD FORBIDS THE BANNS."

Speaking on the "Education for parenthood" at a public morals conference at Caxton Hall, yesterday, Dr. Saleeby, the eminent Eugenist, said that if there were any attribute of potentiality of youth which they should rightly educate more earnestly than all others it was racial instinct.

Yet they carefully ignored it, and devoted themselves to reiterating the correct sequence of King Henry the VIII's wives. Those who believed in eugenics, or race culture, divided eugenics into positive and negative, the former being the encouragement of parenthood on the part of the worthy, and the latter the discouragement of parenthood on the part of the unworthy.

It must be taught that "making a good marriage" might be other than its ordinary and blasphemous meaning, for it would mean uniting oneself with a partner whose personal qualities were such as not only made him or her good to live with, but worthy to become a parent of the future.

Again the girl who knew negative eugenics would not permit herself to be deluded by an ill-founded quixotism into marrying a drunkard in the hope that she might "save" him. It was vastly more probable that he would ruin her, and the potential third party to the bargain, the unborn child, forbade the banns.

Dr. Sinclair, Archdeacon of London, referred to the conspiracy of silence under cover of which children had grown up, and were growing up to full age unwarned as to the dangers which beset them in the exercise of their highest functions.

This was largely responsible for the serious prevalence of ailments, the very existence of which had been kept from the knowledge of those most deeply concerned. Physicians told them that these retributions of nature constituted "a great black plague" as formidable and fatal as the scourge of tuberculosis.

It had led to the existence of the pitiable sisterhood of the streets, unendingly recruited by ignorance, and by the malicious schemes of traders in white slaves, who preyed upon the folly and passions of their victims under cover of this conspiracy of silence.

Father Bernard Vaughan said they must be determined that England should never be known in the future as the land of the empty church and the empty cradle.

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From

New Age

12.5 10

EUGENICS.

TO THE EDITOR OF "THE NEW AGE."

Dr. Saleeby's assertion that I have since heartily assented to the "Eugenic" propositions I refuted in my "Mankind in the Making" is absolutely untrue. I am quite at one with Mr. Chesterton and Mr. Shaw in regarding such "Eugenics" as Dr. Saleeby propounds in your last issue as childish nonsense with cruel possibilities.

H. G. WELLS.

DR. SALEEBY REPLIES.

TO THE EDITOR OF "THE NEW AGE."

Mr. Wells attributes to me an assertion I never made and calls it absolutely untrue. I said nothing about "Mankind in the Making," nor about such eugenics as I advocate. I referred to his contemptuous remarks about "Galtonian eugenics." When Sir Francis Galton read his paper on "Eugenics" to the Sociological Society in 1904, Mr. Wells criticised him (Sociological Papers, 1904, pp. 58-60), accusing him—for instance—of merely inventing another name "for the popular American term stirpiculture" (which Mr. Galton had invented himself), and declaring that "now and always the conscious selection of the best for reproduction will be impossible," and that "It is in the sterilisation of failures ["cruel possibilities" here?—C.W.S.], and not in the selection of successes for breeding, that the possibility of an improvement of the human stock lies."

But in 1909 Mr. Wells writes in "T.P.'s Weekly": "It has been the perpetual wonder of philosophers, from Plato upwards, that men have bred their dogs and horses, and left any man and woman, however vile, free to rear offspring in the next generation of men. Still that goes on. Beautiful and wonderful people die childless and bury their treasure in the grave, and we rest content with a system of matrimony that seems designed to perpetuate mediocrity. A day will come when men will be in possession of knowledge and opportunity that will enable them to master this position, and when it is assured that every generation shall be born better than was the one before it."

In 1904 "now and always the conscious selection of the best for reproduction will be impossible"; in 1909, "a day will come," etc.

My contention was that "prominent critics are changing their minds—perhaps without being aware of it"; and I am heartily obliged to Mr. Wells for his demonstration.

C. W. SALEEBY.

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From **PALL MALL GAZETTE,**
Newton Street, Holborn, W.C.

SCIENCE AND PRIMOGENITURE.

There are many among the first-born who, like the present writer, can scarcely be gratified at hearing that they, and the second-born, are peculiarly liable to tuberculosis, insanity, albinism, and criminality, though we obtain some satisfaction from the statement that we shall live rather longer than our younger brothers and sisters—presumably in consequence of our special predisposition to tuberculosis, etc.

BIOMETRICS AND THE FIRST-BORN.

This is what the biometricians—so-called, one fancies, because they measure everything but life—would have us believe, and attention has lately been drawn to their conclusions as involving a condemnation of the principle of primogeniture and institutions based thereon. I am not concerned here to defend the House of Lords nor primogeniture as a social principle in any of its forms, but I am concerned to protest against the tendency to identify the divine cause of eugenics or race-culture with these mathematical divinations.

Supposing it to be true that the first and second born are "inferior in natural gifts," as Sir Francis Galton says, or specially liable to tuberculosis, etc., as Professor Karl Pearson says (though he adds, "for aught I can say the eldest-born may have more ability"), let us note the dilemma in which our actuarial efforts have placed us. Either the accepted teaching as to the practical inviolability of the germ plasma is wrong, and the age of the parents, its hosts, affects its constitution, or else heredity is less important than we supposed, and the tuberculosis, insanity, criminality are the results of some specially bad environment to which the earlier-born are exposed—say, spoiling of the heir or maternal inexperience. In point of fact, the biometricians would admit neither of these conclusions, necessary though one of them must be. Sir Francis Galton himself was the first to declare that, as Weismann later proved, parental modifications do not affect offspring; and for years Professor Karl Pearson has been more assured that nurture or environment is of small importance, or none, compared with heredity.

A MEANINGLESS STATEMENT.

My concern here is merely to distinguish between the principles of eugenics and this condemnation of the first-born; but it may be added that I believe this recent pronouncement to be wholly without meaning. I will not trouble to note the difference of opinion as to the ability of the first-born, nor to comment on the tendency to longer life of those who are specially prone to tuberculosis, etc. Things like that are trifles in biometrics, where anything may happen. The point I wish to make is that statements about the first-born can mean nothing, and investigations can discover nothing, until we abandon this preposterous worship of Number as Number—in which our Neo-Pythagoreans remind one of nothing more than the superstitions about the seventh son of a seventh son—and turn to the initial question of the ages of the parents. The present writer is a first-born of a mother who was over forty at his birth. Ought he to count as a first-born or as, say, a fifteenth-born? No one can say, because no one has attacked the problem properly. We must first distinguish between the parents, and discover whether the father's age alone has any effect on offspring. Then we must study the mother's age, realising that the natural development of the two sexes is not identical. Then we must put the father quite out of account, unless we suppose that, apart from his age, the numerical position of his children is significant, and must inquire whether, apart from her age, the mother's experience affects her offspring. Also we must distinguish between her psychological experience, her acquirement of knowledge about baby-feeding, etc., and her physiological experience, as it might be that the effect of child-bearing upon her organism was good or bad for subsequent children. As regards the mother's merely learning, I believe that infant mortality is largely a massacre of the first-born, but later the mother knows by sad experience and the child survives. This is not necessarily tantamount to a condemnation of primogeniture.

THE SIZE OF FAMILIES.

It is not for one moment suggested that the problem is nearly as simple as even the foregoing would suggest. But enough will have been said to show that we must think again before we accept what we are now being told about small families. If people have small families, the world will soon be filled with more or less tuberculous, insane, and criminal first and second born; and the normal population will not be born at all. Supposing that we accepted without criticism what the biometricians tell us, that would be so.

But suppose that, if the statement about the first-born were a fact (which I do not for a moment believe), it depended upon the age of the parents, and that it was the children of younger parents who were defective. Then the present middle-class tendency to postpone marriage, against which these protests are being made, would be salutary and beneficent. It would mean that, so to speak, the first and second born were omitted, owing to the lateness of the marriage, and the family was started with the third-born and his healthier expectations!

No; if the case against the House of Lords is to depend on the biometrical condemnation of primogeniture, that threatened institution will live as long as the first-born, who is peculiarly threatened with so many deadly ailments, but somehow has "a slightly longer length of life."

C. W. S.

Alcoholism & Offspring
1st Alcohol Memoir
Parental Alcoholism

Times 1910 May 21
M. Post 1910 Dec 18
Times 1911 Jan
Scotland 1910 May 24

Leader
Leader 2 copies
Leader re B.M.J. 2 copies

Heredity & Tradition
~~Engines & Social Reform~~

Sunday Times 1910 Jul 9
Nation 1910 Aug

Alcoholism & Offspring
Problem of the infant
Parental Alcoholism

Yorkshire Post 1910 Sept-
Glasgow Herald ? Nov
Yorkshire Post 1911 Jan
- - 1910 Nov

-
-
-
-
-

Alliance News 1910 Sept-15
N. G. 1910 May
B. M. J. 1914 Jan 14

Article: Hereditary Stenosis
{ Reference to Dr. Hyslop's address to the
Society for the Study of Inebriety

Alcohol & Heredity

The Hospital 1911 Jan
Morning Post -
Glasgow Times -
Daily News -
The Times -
Daily Telegraph -
North Guardian -
Northern Whig -
North Eastern -

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Allusion to Memoir x
(Temperance Papers)
or point of view

Country Life 1910 May
Brit. Congress 1910 June
John Bull -
Sunday Sch. News - July
Baptist Times - Aug
X'm's World - May
Daily Chron - Nov
The Tablet - May
Daily Mail 1911 Jan
Aberdeen Free Press 1911 Jan
Standard 1910 Oct-
Times ? ?

Heredity & Crime
Eugenics

Report - of Harverian Oration by Danks
Leader alludes Dr. Kern's Memoir School children



list of names

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From YORKSHIRE POST,
10, Park Street, LEEDS.

7-1-11

The excitement aroused by the Eugenics Laboratory Memoir on parental alcoholism as affecting offspring—announced as a "preliminary study"—has not died down before "a second study" appears from the press. It is not what we had expected. The further inquiries previously announced were to be concerned with children of greater than school age, who were not dealt with in the "preliminary," but this "further study" is, in fact, merely an additional reply to critics of the first. So far as concerns the observations of Professor Marshall and of Dr. Keynes, the joint-authors of this new "Memoir," Professor Karl Pearson and Miss Elderton are content to abide by Mr. Pearson's pamphlet, "Questions of the Day and of the Fray," which has already been discussed in these columns, and was not regarded as an adequate answer. The new Memoir is addressed to attacking other critics, and notably Sir Victor Horsley and Dr. Saleeby. The method adopted for showing that these gentlemen are not worthy of credence is to examine temperance writers whom they approve, and, in many cases, expressly contrast with the Eugenics Memoir; and, having shown that these writers have practised very faulty methods, they assert that Sir Victor Horsley, Dr. Saleeby, and the others, who have failed to note the faultiness of their authorities, are not entitled to audience. A pamphlet on these lines cannot fail to be amusing; it is even instructive, as an expert criticism of method; but it hardly amounts to "a second study of the influence of parental alcoholism on the physique and ability of the offspring." The authors develop a good deal of heat, use a considerable amount of rhetoric, and are occasionally guilty of unscientific processes—as where they add 67 per cent. of abstainers in one group to 57 per cent. in another, not necessarily the same size as the first, and, dividing by two, so arrive at 62 per cent. abstainers in the two groups taken together. This mathematical lunge will rejoice the enemy, while the heat and rhetoric suggest that Professor Pearson and Miss Elderton are suffering from a cause to which they attribute some of the vagaries of the temperance statisticians—"The intellect of man can be affected by toxicants more subtle than alcohol, and the most dangerous of these is the passion for collecting, without weighing, any statements which will support a prejudgment." On some points such authorities as MacNicholl (America), Laitinen (Finland), Benzols (Switzerland), Demme (Switzerland), support the Laboratory results, but the Laboratory cannot accept their occasional support whilst ridiculing them as a whole; and, as it appears to us, not always quite fairly. It is

difficult to avoid the suspicion that Professor Pearson and Miss Elderton have been "affected by a toxicant more subtle than alcohol," and that is a sort of pride—perhaps natural in a modern who has taken up an "Athanasia contra mundum" position—which, nevertheless, is unscientific and as deplorable as a prejudgment. The Memoir does seem to show that the Laboratory have devised for the study of such problems, methods much more exact than their opponents. It adds no fresh pertinent information respecting the main question in hand, but merely re-states the conclusion that "there is an antecedent hereditary defectiveness in those cases where parental alcoholism has been found associated with mental and physical defectiveness in the offspring," and that the offspring are defective owing to the defectiveness, and not the alcoholism of the parents. Moreover, the present Memoir does not speak of this conclusion as having been, but as likely to be, definitely proved.

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From **MANCHESTER GUARDIAN,**
3, Cross Street, MANCHESTER.

A Paradox Explained.

THE tenth memoir which has been issued from the Francis Galton Eugenics Laboratory of the University of London contains some curious statistics on the influence of alcoholism in parents on their children's ability and physique. It is difficult for the lay mind to find its way through the maze of scientific terms in which students of eugenics are apt to envelop their subject, but underneath all the "correlation coefficients" and the careful caveats with which anything approaching unwarrantable generalisation is set aside, one gleams some strange results. The Manchester figures (it is gratifying to see that there is less alcoholism per cent of the population here than in Edinburgh) show that the children of the intemperate are healthier than the children of the sober, and generally heavier and taller. There is a greater percentage of consumptive and epileptic children in the families of the sober, and while girls who are the offspring of alcoholic parents die young in greater numbers than those of sober parents, the mortality among boys is less when the father and mother drink than when they do not. All this is at first sight highly bewildering and paradoxical, but presently the probable explanation of the paradox appears. The children of the alcoholic are more physically fit because it is those who were originally the most robust and physically fit members of the community that have the strongest taste for alcohol. The fitness of the children is, as the report moderately puts it, "an indirect effect of heredity, and not a result of alcohol." Girls die young in greater proportion in drunken homes not because their constitutions are impaired hereditarily, but because a drunken home means an unfavourable environment, and work is thrown on them at an age when they are unable to bear it. Here at any rate the social reformer is given better hope for the efficacy of his efforts; but when all is said and done we have a somewhat meagre result from the immense and complicated labours involved in such a report as this. The amassed statistics seem to show certain tendencies; the methods by which we detect logical fallacies are applied to these statistics, and the tendencies are proved not to exist. However, while the science of eugenics labours for new truths and resists old ones, we may without misgiving go on with our empirical attacks on the problem of alcoholism in our own way.

ON SOME OF THE BIOLOGICAL AND STATISTICAL ERRORS IN
THE WORK ON PARENTAL ALCOHOLISM BY MISS ELDERTON
AND PROFESSOR KARL PEARSON, F.R.S.

BY
MARY D. STURGE, and SIR VICTOR HORSLEY,
M.D. F.R.S., F.R.C.S.

INTRODUCTION.

No question is more interesting to the medical profession than the alleged physical deterioration of the people, and upon no profession does so heavy a responsibility rest to oppose as far as possible all known causes of physical deterioration. According to the Report (1906) of the Interdepartmental Committee on Physical Deterioration presented to the House of Commons which inquired into the question whether we are degenerating or not, the two foremost causes of deterioration, stated by the Committee and bracketed as mutually interactive, are bad housing and drink. It is, therefore, of the utmost importance that all public statistical work on the latter subject should be carefully examined. If it is correct, it must prove a valued national assistance; but if it is incorrect, it may entail national consequences little short of disastrous. In our opinion the recent memoir of Miss Elderton and Professor Pearson belongs to the second category.

We therefore publish the subjoined paper to extend our previous criticism of that work, which professedly studies the influence of parental alcoholism on the physique and ability of offspring, the result being that, in the opinion of the authors, alcoholism causes no appreciable detriment to the drunkard or to his children. The papers published by these authors on the subject are to date:

1. A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring, by E. M. Elderton and K. Pearson, F.R.S., 1910.
2. Letters by Professor Pearson in the *Times* of July 12th and August 10th, 1910, in reply to Professor Alfred Marshall.
3. Supplemental Memoir by Professor Pearson, being No. 1 of Professor Pearson's *Questions of the Day and of the Fray*. A reply to the *Cambridge Economists*, 1910.
4. A second study by Karl Pearson, F.R.S., and Ethel M. Elderton, being a reply to certain critics of the first Memoir, etc., 1910. Published December 24th, 1910.

The material on which they worked was (1) a remarkable report by the Social Investigation Committee of the Edinburgh Charity Organization Society, in which the social conditions of the families of 1,400 school children dwelling in one of the worst slum districts of Edinburgh were set out in schedule form with extraordinary wealth of detail; and (2) private notes, by Miss Mary Dendy, of feeble-minded children in Manchester (no date).

(Of this material the first half, the Edinburgh report, ought to be in the hands of every one interested in public health and social reform. It is published by Messrs. P. S. King and Co., Orchard House, Great Smith Street, Westminster, 1906, price 5s. As regards the second half—namely, Miss Dendy's notes—these can no longer remain private, and we have elsewhere (*BRITISH MEDICAL JOURNAL*, December 31st, 1910) asked Miss Dendy to publish them in the interests of social science and statistical accuracy.)

The first appearance of these writings, and the extraordinary conclusions which the authors arrived at last May—namely, that alcoholism does not appreciably affect either the efficiency or wage-earning power of parents, or the physique and ability of their offspring—caused a great deal of pleasurable excitement in some sections of the community.

It was, however, the opinion of various statisticians and biologists (prominently among the former Professor Alfred Marshall and Mr. Keynes) that Miss Elderton and Professor Pearson had omitted to observe certain obvious precautions to ensure accuracy, in handling the data, biological and statistical, on which their conclusions were based. It was generally felt by all who read the *Times* of May 21st, 1910, that if the memoir was an untrue presentation of the facts, a very grave injury had been done by Miss Elderton and Professor Pearson to the sciences of eugenics, of statistics, and of sociology. In fact, we may quote (altering their term "good cause" to "science") Miss Elderton and Professor Pearson's own words in their memoir (p. 1): "No greater evil is done to 'science,' than when



JAN. 14, 1911.]

PARENTAL ALCOHOLISM AND OFFSPRING.

[THE BRITISH MEDICAL JOURNAL 73]

statistically undemonstrable statements receive, owing to emotional appeals, general credence, and then wider experience shows them later to be inexact."

Their words express the position well, because, as we shall immediately show, they have issued "statistically undemonstrable statements" which have caused, besides the evils they refer to, much loss of time and trouble to many scientific workers who have bought and laboriously considered memoirs which, though issued under the aegis of the greatly honoured name of Francis Galton, are unworthy of such titular distinction.

In the first place, it must be understood that Miss Elderton and Professor Pearson, beginning with the first paragraph of their first memoir, have taken the (fortunately) extremely rare step of arrogating to themselves statistical omniscience and accuracy, scientific "judicial calm," and all noble motives that can inspire social workers, while at the same time they accuse other investigators in the same field (most of whose scientific work they at first ignored) of bias, (1) p. 1, 32; (3) p. 1; of wilfully publishing false statistics, (1) p. 32; of "heedless criticism," (3) p. 25; of not possessing "real knowledge of the subject under discussion," (3) p. 26; of "faulty logic," (3) 1, etc.

It is necessary to make this unpleasant fact quite clear, as Professor Pearson has accused, (3) p. 24, "the Cambridge Economists"—that is, Professor Alfred Marshall and Mr. Keynes—of initiating personal comments, whereas, as we have just shown, he and Miss Elderton were the first and only offenders. Moreover, an editorial of the BRITISH MEDICAL JOURNAL of November 12th, 1910, most unjustifiably hinted that the opponents of scientific error were equally guilty with Professor Pearson of his offence. We may be allowed to express the hope that future memoirs and papers by the Galton Laboratory will be issued free from such blemishes.

We will now deal systematically with the errors of Professor Pearson and Miss Elderton's work.

COMPLETE ABSENCE OF FUNDAMENTAL DATA.

ERROR 1.—*Absence of Controls.*

As Miss Elderton and Professor Pearson claim in their writings mathematical accuracy in their treatment of the subject of parental alcoholism and its effects upon the offspring of the toxically affected parents, their first memoir must be supposed to contain figures and data of at least two groups of families, alcoholic and non-alcoholic respectively. As a matter of fact neither their memoir nor any subsequent papers contain these necessary facts, figures or data. Though the subject of parental alcoholism has long been under scientific discussion and observation, they appear to have been ignorant of all the literature and previous researches on man and the lower animals. These would have directly suggested to them that a research, to deserve the infallibility they claim for their memoir, should follow the ordinary lines laid down by previous workers in toxicology and pharmacology, and particularly by Laitinen, Hodge, MacNicholl, and others, the direct workers on this very subject—that is, that the research must deal with two groups of parents, whether of man or the lower animals, to one of which groups the poison (in the case under discussion, alcohol) has been given and to the other none. As they selected the study of parental alcoholism in man they ought to have compared the offspring of drinking parents with the children of teetotalers. They refrained from fulfilling this, their primary duty in such an inquiry.

Our first charge against them, therefore, is that they have committed the fundamental error of providing no adequate control of their investigations into the condition of the offspring of drinking parents.

ERROR 2.—*Unscientific Use of Terms.*

Not content with having committed the above stated elementary error in the procedure of a research for which the highest scientific accuracy is claimed, they further

* See first Memoir. While the present paper was being completed a second "Memoir" by Miss Elderton and Professor Pearson to which we will reply later (has appeared, consisting of a personal attack on myself and a commentary on the work of some authors quoted in the book written by Dr. Sturges and myself. Although all work published over our names is well known to be in strict collaboration, Miss Elderton and Professor Pearson omit from cover to cover any reference to my colleague and her work. Professor Pearson's last two letters in the JOURNAL are also examples of the same discourtesy (Victor Horsley).

† The references are to the authors' papers enumerated above.

committed the unjustifiable fault of using vague and unscientific terms which immediately suggested to the uninitiated that the authors had fulfilled the very scientific requirements we have just shown they omitted. The first and worst instance is their use of the word "non-alcoholic." They speak as though they had worked at a group of "non-alcoholic" parents, and constantly employ that expression, using it freely and, especially in the *Times* (June 10th, 1910), without any qualification, although, in a passing sentence in their first paper, they give a definition of their word "sober"—namely, that "the health of the individual or the welfare of the home" did not "appear" to be "interfered with" by the alcohol taken. Concerning this last point even, we must draw attention to the fact that as the Edinburgh records give no data whatever as to the effect of the alcohol on the health of the parents (except in a few instances when they happened to suffer from alcoholic insanity) Miss Elderton and Professor Pearson had no data before them as to whether the health of what they call a "sober" person was or was not "interfered with" by the alcohol he took. Consequently their definition is worthless for an "accurate," "mathematical," "highly scientific" investigation.

The only term which can be appropriately applied in contrast to the "alcoholic parent" of the Edinburgh records is "less alcoholic parent." (See also Error 3.)

Naturally the public press and various promoters of alcoholism have been completely deceived by their misuse of the term "non-alcoholic," and believe that the authors have "demonstrated" (to use Sir J. Crichton-Browne's word) "incontrovertible facts" (to use the *Times* word) in favour of alcoholism and against abstinence.

The second instance is their misuse of the word "offspring." Considering the data they selected, the correct title of their work would have been, "A study of the influence of parental alcoholism on the physique and ability of children of school age."

The term "offspring" includes the whole of a generation, and therefore covers a wide field. We are all "offspring" to the day of our death, and carry our hereditary gifts or disabilities throughout life. Hence, a memoir dealing with the "effect of parental alcoholism on offspring" ought at least to trace that effect beyond the age of 14—that is, into the period when the strain of inherited endowments begins to be tested in full.

As was pointed out by Dr. Maurice Craig (*Lancet*, June 25th, 1910), it is during the two decades next following the 14th year that symptoms of degeneracy usually appear. "It is when the real work of life begins that the child of the alcoholic parent first shows visible signs of early nervous exhaustion, morbid fears, or more serious mental disorder."

Again, no memoir professing to deal with the question, and pronouncing wide sweeping generalizations, is at all adequate unless it takes into consideration the physical condition of the infants from birth to school age, in addition to the years of development after school life and adolescence.

Our second charge against them, therefore, is that they have used in a scientific paper, for which they claim mathematical accuracy, terms which, as one of us (V. H.) pointed out last July (BRITISH MEDICAL JOURNAL, August 6th, 1910, p. 341), are so vague as to be misleading. They have thus gravely deceived the uncritical public into believing that their memoir is a scientific presentation of the subject, and that it has led to the discovery of certain "startling" (Elderton) conclusions.

ERROR 3.—*Selection by the Authors of a Non-representative Population.*

Miss Elderton and Professor Pearson selected for the study of parental alcoholism what he called "a fair sample of the working class," but which was, in fact, a slum population sunk so low that of the 781 families inquired into no less than 62.5 per cent. were tainted by drink, and 81 per cent. were either drunken or in receipt of charitable aid (Keynes). By so doing they cut themselves off from the possibility of fulfilling the first requirement of a modern (and infallible) research into parental alcoholism and its effects by choosing such material that they were unable to make any comparison between the children of alcoholic and non-alcoholic parents respectively, and yet that is what, through their title and terminology, they profess to have actually accomplished.

As Professor Alfred Marshall said (*Times*, July 7th, 1910, p. 18), "these two groups (of families) have been so selected that the conclusion reached is practically embodied in the choice of data."

(The "conclusion" Professor Marshall refers to is the chief generalization arrived at by Miss Elderton and Professor Pearson, namely, that the alcoholic parents and children were no worse than what they termed the "non-alcoholic," but who were really "less alcoholic.")

Had Miss Elderton and Professor Pearson chosen a fair sample working-class population, instead of a people living in what is described in the Edinburgh schedules as "this most dreadful neighbourhood," they would have been in a position really to study parental alcoholism, for they would have had at their disposal a group of genuinely non-alcoholic families to compare with the offspring of alcoholic parents.

Having thus prejudiced the issue by the selection of their statistical data they had no right or justification to make any generalizations of the kind for which their work has become notorious.

The utmost that the Edinburgh data they selected can supply as regards the biological efficiency of parents is a contrast between "alcoholic" and "less alcoholic" individuals, which is a totally different category of facts. It will be seen presently that for the question of wage-earning efficiency the Edinburgh statistics give, after careful elimination of those cases in which the data are wanting, a distinct contrast between the capacities of the alcoholic and less alcoholic parents respectively.

This contrast proves (*vide infra*) to be in favour of the less alcoholic individual, and against the drunken workman, thus contradicting Miss Elderton and Professor Pearson's chief generalization in favour of the drunkards, and confirming Professor A. Marshall's position.

But as regards the main issue of their work—namely, a study of parental alcoholism—the data are worthless for a comparison between alcoholics and non-alcoholics.

As a striking demonstration of this fact, and of the inconceivable carelessness and inaccuracy with which Miss Elderton and Professor Pearson have handled the Edinburgh data, we will take the example of the "teetotal families," which we have examined throughout the schedules.

Of course, as there are said to be always bright spots in darkest places, so it might be expected that even in such a population there would probably be some teetotalers.

There are a few. The Edinburgh Committee say in their report, p. 17, that of the 781 families they found 18 teetotal.

Miss Elderton and Professor Pearson say in their memoir, page 5, that the teetotal parents "were too small a class to be kept separate," and therefore they put them into what they call the "sober" or "non-alcoholics" class.

It is not, however, true for them to say they have not kept these teetotal parents separate, for it will be found, (1) page 37 et seq., that they enumerate the children of these (so-called) teetotalers in no less than twenty-eight tables, in separate columns under the heading *teetotalers*, and in contrast to "sober," "drink suspected," "drinks," "bouts," etc. Though we cannot explain why these authors deny the facts exposed in their own tables, we can show that their use of these so-called teetotal persons as teetotalers and as teetotal parents was most unjustifiable, and that, therefore, their tables are wholly untrustworthy, as will now be evident.

ANALYSIS OF THE "EIGHTEEN TEETOTAL FAMILIES."

In the first place it is not quite certain to us what constitutes a "teetotal family." For instance, the Edinburgh schedules give, as "teetotalers," a mother and all her children, one somewhat weak mentally, and these are spoken of in the report as a "teetotal family." Further investigations, however, show that the father is in an asylum suffering from "alcoholic insanity," though represented by Professor Pearson in his table to be earning 26s. 2d a week.

In the second place, we have searched the schedules

* In our own opinion the expression "teetotal family" should only be applied to a household in which both parents are genuine teetotalers, and who commenced their teetotalism for some (say ten) years before the birth of their first child.

and find that nineteen fathers are spoken of as being "teetotalers." We therefore tabulate them as the "heads of the families," but in our opinion it is even more important to consider also the habits of the wife if the question of the effects of parental alcoholism is under discussion.

Miss Elderton and Professor Pearson have naturally not taken the matter of either the father or mother as being teetotal parents into consideration, since, as we have already seen, biological facts are of little importance to them if there is enough material for forming conjectures.

We have placed in the accompanying table the habits of the wife, that is, mother, in the so-called "teetotal families," wherefrom it will be seen that in a full half of the cases of "teetotal families" the mother either drinks or there is no evidence whatever to show whether she drinks or abstains.

In the remaining half, in which the wife is described as a "teetotaler," we have not, except in one instance (530), any more knowledge in her case than in that of her husband as to when the parental teetotalism began, that is, whether before the birth of the children or after.

Table of "Teetotal Families."

| No. of Father in Edinburgh Report. | Date of Pledge Taken. | Habits of Wife. | Date of Pledge Taken. |
|------------------------------------|--|--|-----------------------|
| 22 | "Two years ago" | No evidence | Unknown. |
| 57 | Unknown | Teetotaler | — |
| 93 | Unknown | Probably a teetotaler | — |
| 108 | Unknown | Teetotaler | — |
| 141 | Twelve years. Four children born before; five afterwards | No evidence | — |
| 147 | Nine years—that is, since death of wife | Dead nine years | — |
| 200 | "Recently"; youngest child 4. | No evidence | — |
| 244 | Unknown | No evidence | — |
| 258 | Unknown | Teetotaler | — |
| 260 | Unknown | Drinker | — |
| 336 | Unknown | Drinks, but not seen to be drunk | — |
| 342 | Unknown | Teetotaler | — |
| 367 | Unknown | Teetotaler | — |
| 479 | Unknown | Teetotaler | — |
| 530 | "Now" | Drank at least during part of child-bearing period | "Now." |
| 621 | Five years | Suspected of drinking | Unknown. |
| 643 | Unknown | No evidence | — |
| 715 | Unknown | No evidence; home miserable | — |
| 774 | Unknown | Teetotaler | — |

Of these 19 cases, in no less than 13—that is, Nos. 57, 93, 108, 244, 258, 260, 336, 342, 367, 479, 643, 715, 774, there is no evidence to show when the father or the mother became a teetotaler before becoming a parent. Therefore these cases are worthless in a study of the effects of parental alcoholism. Of course this biological point is nothing to Miss Elderton and Professor Pearson, who have committed the far greater, in fact gigantic, error of not determining the parallel datum *qua* parentage—(namely, the incidence of the alcoholism) in the whole of the rest of the Edinburgh material—namely, 762 families (*vide infra*). It is quite comprehensible, therefore, why they accepted without question these thirteen teetotalers—whose incidence of teetotalism is absolutely unknown—as non-alcoholic parents; and, although they deny considering them separately, they nevertheless have done so freely. The rest—namely, Nos. 22, 141, 147, 200, 530, 621—are the only cases in which the facts of the incidence of the parental teetotalism are given in the schedules for the fathers, and it will be seen that these were not genuine teetotal parents, but the exact opposite.

Thus, No. 22, whose youngest child is stated to have been 7 years old, was "a drunken wreck" until two years before the inquiry, when he became a teetotaler—that is, five years after his youngest (of four children) was born

It is clear that this was an instance, not of parental teetotalism, but parental alcoholism.

No. 141 became a teetotaler after the first four of his children were born and before the remainder (five). Of these five, four appear in the schedules in detail. Of these four, the first child was born immediately after the father's teetotalism commenced, and the three others followed within five years. In our opinion the father's parentage of these children was not, accurately speaking, a teetotal one, but an alcoholic one, in diminishing ratio. (We may note, in passing, that the intellectual capacity of the four children increased as the alcoholic influence went more and more into the background, the description of the mental aptitude of the children being successively "dull," "dull," "medium," "good" (for the youngest—that is, born six years after the alcohol had been given up).

No. 147, the youngest of whose five children was 10 years old, and who had become a teetotaler after his wife's death "nine years ago"—that is, a year after the last child was born—is described as having been "a hard drinker, and broke her (that is, his wife's) heart."

No. 200 figures as a teetotaler, but he only "recently" signed the pledge after a "reckless" life. His youngest child was 6½ years old, however.

No. 530. All children dead, except one 9 years old. Father and mother "teetotalers now" (*sic*).

No. 621. This man only became a teetotaler after the birth of his two children, whose cases are described in the report.

To sum up this matter of the so-called "teetotal families" and the use made of them by Miss Elderton and Professor Pearson, it is perfectly obvious (1) that for all except 6 of the cases there were no data whatever as to the existence or not of non-alcoholic paternal parentage; (2) that in no case did they consider whether the mother was, in fact, a non-alcoholic parent. As Professor Bateson truly observes of Professor Pearson's work, it is very obvious that his "methods dispensing with individual analysis of the material are useless" (*Mendelism and Heredity*, p. 7). In this question of national eugenics they are also most dangerous.

No doubt, Miss Elderton and Professor Pearson have saved themselves much time and trouble, but only at the expense of their own scientific reputation and that of the Galton Laboratory of Eugenics.

We shall presently see further inaccuracies and errors, for which these authors are responsible, owing to their omission of necessary statistical precautions in examining the data they selected and to their method of creating such statistics where real data did not exist. Also, we shall show later how their methods of treating the data always tend in favour of the capacity of the drunken, and therefore in support of their first and chief generalization.

ERROR 4.—Absence of any Proof of Alcoholism beginning before the Birth of the Children.

As Professor Marshall says (*Times*, July 7th, 1910): "An inquiry into the influence of parental alcoholism on the offspring must suppose that the alcoholism had set in for some time before the offspring were born."

All will agree to this elementary biological position, and therefore—like Mr. Keynes, and notably Dr. Saleeby—we looked through Miss Elderton's and Professor Pearson's memoir to see how they determined this essential and fundamental datum for each child whose case they subsequently investigated mathematically.

Not one word on the subject is to be found in their memoir, although we are told to receive it as a monument of scientific infallibility. In the report of the Edinburgh Charity Organization Committee, which formed the one-half of their original material, the datum is not given anywhere. Unfortunately the other half of their material—Miss Dendy's—is so far kept private, and we have no means of knowing whether it contains these facts so essential to a mathematico-statistical investigation into parental alcoholism.

Thus, though Miss Elderton and Professor Pearson grouped the children investigated by the Edinburgh workers into all kinds of tables, and illustrate their "physique" and "ability" by numerous graphs and determinations of "g," they did not even know how many were, or which of the said children was, or was not, the subject of the effects of parental alcoholism.

In other words, the pages of tables and calculations are, statistically speaking, deceptions, because they are represented to be the results of certain exact scientific determinations, which, as a matter of plain fact, have never been made by the authors.

This fatal hiatus, in a research for which so much accuracy is claimed, has been repeatedly pointed out by the following writers: Sullivan, Keynes, Saleeby, Whittaker, Sims-Woodhead, Basil Price, and one of us (M. D. S.). Professor Pearson was forced to attempt some kind of reply to this indictment, and therefore put it in a small-print footnote in his supplemental memoir, p. 15, actually repeating it in a letter against us in the *JOURNAL* for November 26th, 1910. It is as follows: "There are as many children of 5 and 6 as of 11 and 12, and if some children were born before parental alcoholism had started, some were certainly born after," etc. The italics are ours.

We have elsewhere (*BRITISH MEDICAL JOURNAL*, December 3rd, 1910) shown that this passage by Professor Pearson convicts Miss Elderton and Professor Pearson of indifference to scientific facts in their composition and construction of their statistical tables. For the whole of their memoir being professedly a study of the effects of parental alcoholism in children, the above quotation proves two things: first, that they have not, and never have had, adequate data to give them a basis for such a mathematico-statistical inquiry as they profess to have carried out; and secondly, that in spite of being perfectly well aware that a number of the children must have been born before the parental alcoholism set in, they nevertheless included them in their tables without the slightest reserve or qualification, and thereby vitiated their whole research. This second biological error—namely, their huddling together in a confused heap the children of alcoholics of various degrees and children of parents whose alcoholism began after the birth of their offspring with children who were really born after the alcoholism began—is the principal reason why their results are so inconclusive as well as erroneous (*vide infra*). To our mind the indifference to scientific facts and terms which led Miss Elderton and Professor Pearson to speak incorrectly of having worked at "alcoholic" and "non-alcoholic" parents is only exceeded in scientific wrong-doing by their thus publishing elaborate mathematical tables about the influence of parental alcoholism on children as though they knew which of these children were or were not the subjects of parental alcoholism when they had no data of the kind in their hands, and consequently based their whole research on conjecture. Most truly do the words of Professor Marshall (see *Times*, August 2nd), spoken of another point, also apply here, namely, that Elderton and Pearson's memoir does not "represent ascertained fact, but contains a large element of conjecture." Nothing is more true, for owing to this hiatus in their information, all their tables about the physique and ability, etc., of the offspring are based entirely on conjecture.

Professor A. Marshall raised in the *Times* (July 7th, 1910) the very important further question how long before the birth of the children who were found at the date of inquiry to be at school must the alcoholism be found to have begun, to be reasonably effective. He suggests that this period might be fifteen years. Of course, this is an essential point, which is partly included in the general question of the incidence date of the alcoholism, but it certainly should have been dealt with in the memoir as a separate part of the greater general question.

So also Dr. Clay Shaw, in his evidence before the Committee on Physical Deterioration, said: "We must be careful to eliminate in the case of the father the time when he became an excessive alcoholic. One often sees the later members of a family of worse development than the earlier ones because the father began his excessive indulgence after the earlier children were begotten." These points have never been considered by the authors.

What makes their conduct still more inexcusable from the standpoint of scientific statistics is that with all the wealth of material in their hands they could, with the help of the Edinburgh Charity Organization Society, have ascertained the essential datum of the incidence of the parental alcoholism in a considerable number of cases with but a relatively small expenditure of time and money. Unfortunately sensationalism and "emotional appeal" seem to have outweighed the necessity of further

scientific labour in what the *Times* called a "passionless and scientific inquiry."

THE EFFECT OF MISS ELDERTON AND PROFESSOR PEARSON'S ERRORS OF METHOD ON THEIR TABLES OF CHILDREN'S PHYSIQUE AND ABILITY.

We have just seen that the authors' tables and graphs of the children's physique and ability are fatally vitiated by want of "alcoholic" and "non-alcoholic" grouping, as well as by the absence of data as to which children were or were not the victims of parental alcoholism.

An illustration of the scientific failure of the Memoir owing to these fundamental biological and statistical errors is that out of the 20 pages of tables and statements of results, nearly one-half (actually 9½) are devoted to "parental alcoholism and filial eyesight" in four sections, and yet are utterly inconclusive as results. Thus of the first (refraction) section they finally say: "Throughout the relationships are really small and clearly not simple in character, so that not much stress can be laid on them; but as far as they go (*sic*) they show no definite and marked connexion between intemperance and bad eyesight—the connexion, if any (*sic*), is rather between intemperance and good sight" (p. 19).

Of the second section (acuity) they say: "There is no definite conclusion which can be legitimately drawn beyond the assertion that if acuity of vision is related to parental alcoholism, the relation must be very slight and complex in character" (p. 21).

Of the third section (eye disease) they say: "We think we may say that no correlation between intemperance of the parent and eye disease in the child is indicated by these (Edinburgh) data" (p. 22).

Of the fourth section (home and street environment) they say: "The relationships, whatever they may be . . . are too slight and too entangled for any definite conclusions to be drawn from the present statistics" (p. 25).

To every impartial observer these conclusions of Miss Elderton and Professor Pearson on the subject of parental alcoholism and filial eyesight are valueless as contributions to exact scientific knowledge, and their failure should constitute a warning to these investigators to observe well-known biological and statistical precautions before dealing with human statistics.

ERROR 5.—Contradictory Statements by Miss Elderton and Professor Pearson concerning the Children of Alcoholic Parents—for example, their Physique, Health, and Higher Death-rate.

The Edinburgh data contain an important column, namely, one giving the number of dead children in each family. From this Miss Elderton and Professor Pearson found a higher death-rate among the children of alcoholic parents than among the children of sober parents.

But they also conclude that the health of these same children "appears on the whole slightly better than the health of the children of sober parents." As one of us (V. H.) pointed out last July, these statements are incongruous, for children who are healthier ought not to die more. In their reprinted memoir they take up this objection (although Professor Pearson in the *JOURNAL* of December 24th complained that we had never treated his work seriously till quite recently) and say that there is no *a priori* basis for saying that healthier "surviving" children ought not to die more than less healthy children. To support this they have inserted the word "surviving," by which they intend to suggest that if we assume the excess of deaths among the alcoholics' children to all occur before the age of 5 years, we may imagine the survivors—that is, school children—to be stronger individuals. Their original sentence, which we have just quoted, was, of course, wholly unqualified, and has been (and will continue to be) repeated by the drink trade all over the world as the "scientific proof" of the beneficent harmlessness of alcoholism. An act of this sort carries with it its own condemnation, and, further, on turning to their explanation of this higher death-rate of the alcoholic group, we find (Memoir 1, p. 31) that they make the following deliberate statement.

"It [the higher alcoholic offspring mortality] would appear to be due very considerably to accidents and gross carelessness, and possibly in a minor degree to a toxic effect on the offspring."

Anyone who had not seen the original memoir would naturally assume that the authors worked out mathematically the number of accidents and conditions due to carelessness, and thus obtained some sort of basis for their statement that the alcoholics' children die more from accidents directly due to parental intemperance and carelessness, than from the degenerative consequences of that intemperance.

The Edinburgh data, on which their statement is mainly based, contain absolutely nothing on the question of deaths from accident. There is no indication either that Miss Dendy's notes furnished any information of the kind.

The above-stated conclusion, therefore, is not the result of scientific study of statistics, but is created by Miss Elderton and Professor Pearson in favour of the non-toxicity of alcohol, and has no place among the conclusions of what they term "real knowledge" (p. 32), except as regards "overlaying" (see our book, *Alcohol in the Human Body*, fourth edition, p. 260).

For the adequate consideration of this point, and before coming to their conclusion, the authors ought at least to have ascertained what proportion of accidental deaths actually occurred in Edinburgh among children exposed to domestic carelessness. As they did not take this obvious precaution we have obtained, through the great kindness of Dr. Leslie Mackenzie, the number of accidental deaths among children below fourteen years occurring in Edinburgh during the last seventeen years. These figures, very carefully prepared for us by the Deputy Chief Constable J. Chisholm and Detective Sergeant McConach, show that the average number of deaths per year is 17. Of these, those occurring in children of the helpless ages—that is, 6 years and below—resulting from burns, scalds, suffocation, causes which might probably be the direct result of domestic carelessness, constituted 31.7—say 32 per cent. In other words, it would appear that between 5 and 6 deaths occur per year under these circumstances. Estimating the child population of Edinburgh at about 70,000 (there are 45,000 attending the schools), the cases which are attributable to "alcoholic" accident obviously must form but a small fraction of the heavier mortality they found to exist among the offspring of "alcoholic" parents. Clearly the ordinary condition, that the weaker offspring die more than the healthier, remains unaffected by Professor Pearson's and Miss Elderton's hypotheses against the toxicity of alcohol.

Although we have shown that the whole of Miss Elderton's and Professor Pearson's memoir is, biologically speaking, worthless for the purposes of the study of the effects of parental alcoholism in offspring, by reason of being only a mathematical superstructure raised, as Sir Thomas P. Whittaker says, on a "rotten foundation," we intend now to take up the examination of the chief statistical generalization published in the Memoir, namely, that the wage-earning capacity and efficiency of the drunkard is at least equal to or possibly a little above that of the sober workman.

In saying this we regret in a mathematico-statistical discussion to use such a vague expression as "at least," but it will be seen directly that there are two versions of this sweeping generalization—one, that of Miss Elderton and Professor Pearson, in favour of the sober; and one, that of Professor Pearson, in favour of the drunkard—any vagueness of expression therefore lies at the door of these authors. We take this point up for many reasons, but must preface the discussion by saying that Professor Pearson's contradiction of himself and Miss Elderton is unaccompanied by any explanation, and that examination of their tables shows that they only arrived at their "startling" generalization by mishandling the Edinburgh statistics.

Of course it was upon this chief generalization of Miss Elderton and Professor Pearson that the supporters of alcoholism raised most of their hopes. We confess that until we were able to give time to the closer examination of the memoir we had no idea that workers in any statistical or other laboratory could have dealt with published facts in such a manner.

We note, too, in passing that our experience of the way in which the Edinburgh statistics have been treated by

*"Overlaying," however, appears to be much less frequent in Edinburgh than in Liverpool or London.

Professor Pearson is similar to that recorded of his methods by scientific workers in other fields. (See especially Professor Bateson. After showing that Professor Pearson's non-analytical method leads to "concealment of that order which it was ostensibly undertaken to reveal," Professor Bateson says: "To those who hereafter may study this episode in the history of biological science it will appear inexplicable that work so unsound in construction should have been respectfully received by the scientific world." *Mendelism and Heredity*, pp. 7, 107, 124, 242. Cf. also Dr. W. Leslie Mackenzie on the methods of the work done in Professor Pearson's laboratory on tuberculosis. "On the Diathesis of Phthisis and of Insanity." *Sociological Review*, October, 1910.)

ERROR 6.—Erroneous Conclusion that the Efficiency, as Measured by Wage-earning Capacity, of an Alcoholic Male* Parent is at least Equal to that of a Less Alcoholic Male Parent.

We will now consider in detail the chief generalization raised by Miss Elderton and Professor Pearson, namely, that the effect of his alcoholism on the male parent himself is for biological and social statistics a negligible quantity, since their calculations showed them that his "physique," "intelligence," "wage-earning capacity," and "efficiency" are at least equal to that of a "sober" parent.

Of all their "startling" conclusions this is, of course, the most important, because it is so diametrically opposed to every known fact of social life, seeing that alcohol, to quote the Report of the Royal Commission on the Poor Laws, 1909, p. 221, is universally recognized to be "the most potent and universal factor in bringing about pauperism," and the Report of the Interdepartmental Committee on Physical Deterioration that "drink occupies a prominent place among the causes of degeneration."

These authors begin this subject with the following pronouncement, which we take from their first Memoir, p. 4:

"The wages of the father are to some extent a measure of the general status as to physique and intelligence of the parent. If we consider the father alone, we find that the weekly wages of a drinking man are on the average 25s., and a non-drinking man 25s."

Most people would deduce from this statement that the balance of a shilling in favour of the less alcoholic parent was a fact rather against alcoholism. Not so. Miss Elderton and Professor Pearson hasten to suggest that "a somewhat higher physique or intelligence in the alcoholic might be screened (*sic*) by their habits giving them a lower market value."

The use of this excellent word "screened" prepares the reader for their following pronouncement:

"On the whole it seems reasonable to assume that the drinking parents are in physique and mentality the equal on an average of the sober or possibly a little above their standard" (first Memoir, p. 5).

The italics are our own.

It was, however, quite unnecessary for Miss Elderton and Professor Pearson to act thus on May 21st, 1910, as special pleaders† on behalf of the drunkard and to extol his physique and mentality, since the whole question was on September 1st again plunged by Professor Pearson into statistical chaos.

* The Edinburgh data only provide for investigation of this matter as concerning the male parent, and it must also be remembered that Miss Elderton and Professor Pearson's so-called "non-alcoholic" parent was not a "non-alcoholic" at all, but only a "less alcoholic."

† To those who are interested in the growth of legends, we recommend the study of Miss Elderton's work, *The Relative Strength of Nurture and Nature* (*sic*), published in 1909, where, on p. 26, can be read the preliminary stages of the birth of her and Professor Pearson's generalization as follows: "But before asserting that intemperance of the parents has practically no effect on the physique and intelligence of the children, there is a point to be considered, which I mentioned in the first part of this paper. What is the status of the drinking workman? Is the drinker on an average the abler man and of finer physique? As before, the only estimate we have at present of the intelligence and physique of a workman is the wage he earns. A high wage on an average will mean a stronger and more efficient workman." Miss Elderton further on concludes that "if wage, then, is an estimate of ability and physique, we may say that the ability and physique of the drinking workman is about the average." Thus far in 1909. A few months elapse, and she and Professor Pearson suggest in 1910 that the drunkard may be "possibly" a little above the standard of the sober. The generous public will probably improve on this by putting the drinker up even higher, but we hope that our demonstration that all the superstructure Miss Elderton and Professor Pearson have raised is as substantial as a house of cards, will arrest the growth of this fairy tale of drunkenness.

With "calm" born, one must suppose, of indifference to their previous statement, just quoted and deduced from the Edinburgh statistics—that the alcoholic parent earned only 25s., as against the less alcoholic parent's 26s.—he wrote his supplemental memoir, in which, without a word of warning or correction, he published (from precisely the same data, the Edinburgh statistics) a new estimate (p. 11)—namely, that "the average wage of a drinker is 25s. 6d., and of the temperate 25s. 5d." This extraordinary contradiction of fact being deduced from "scientific statistics" and by means of higher mathematics, we have put into tabular form to make it perfectly clear.

Average Weekly Wage Earned.

| Date of Estimate. | Drinker. | "Sober," "Temperate," or Less Drinker. |
|---|----------|--|
| May, 1910 (Elderton and Pearson, first Memoir, p. 4) | 15s. | 26s. |
| September, 1910 (Pearson, Supplemental Memoir, p. 11) | 25s. 6d. | 25s. 5d. |

We must now point out to the reader (who may be completely puzzled to know why in August Professor Pearson took 7d. away from the virtuous "less drinker" and gave 6d. to the undeserving drinker) that Miss Elderton and Professor Pearson in May, 1910, provided no evidence whatever to show how they arrived at their contrary conclusion that the "less drinker" was better off by 1s. than the "drinker."

It is, of course, very difficult to deal with "scientific statistics" of this perfection when no hint is given by the mathematician authors of the method whereby they arrived at their first estimate and upon which they based the "startling" conclusion that drunkards are as good as or even better than sober people, which so delighted the *Licensing World* and earned from Sir J. Crichton-Browne such eloquent praise.

But although the scientific world must remain in the outer darkness for want of the necessary information about their methods from Miss Elderton and Professor Pearson, we are not altogether without some idea of the standpoint from which Professor Pearson tried to recast these authors' estimate of 26s. versus 25s., and ultimately substituted for it his of 25s. 5d. versus 25s. 6d.

In the *Times*, August 10th, 1910, he gives a wage (and sobriety) table, which he had drawn up and termed an "analysis of the fathers' trades," putting it forward with the commendatory parental observation: "This seems so instructive that it is worthy of publication."

It is certainly instructive, but not in the sense Professor Pearson meant.

What he did was to take from a "verification" wage table drawn up by the Edinburgh Committee (*vide infra*), the average weekly wage found by that committee for those cases in each trade in which the data existed in the schedules for a correct statement to be calculated. Professor Pearson then applied to every case he could find or imagined to exist (*vide infra*, "Coopers," "Porters," etc.) in the schedules, the same rate of wage, whether the data for such application existed or not. Of course in the imagined class there were no such data, and Professor Pearson's action amounted to constructive misrepresentation of the facts.

Having thus, as Mr. Keynes (*loc. cit.*, p. 119) points out, "assumed from the beginning his own solution of the point at issue, namely, as to whether the drunkards in a trade earn as well and as regularly as the sober in that trade, he arrived not unnaturally at the conclusions quoted above."

Now "the conclusions" that Mr. Keynes refers to are the figures of the second, Professor Pearson's, estimate on our table above—the wages earned by the drunken and sober workman respectively—that is, 25s. 6d. for the drinker and 25s. 5d. for the sober.

But, as we have already shown, these conclusions are in absolute contradiction of those arrived at by Miss Elderton and Professor Pearson only three months before—namely, 25s. for the drunken and 26s. for the sober workman.

Whether an interval of a few months caused Professor Pearson to commit such a large error in calculating such a thing as an average weekly wage, or whether he carelessly copied down wrong figures from the first Memoir,

it follows in either case that his and Miss Elderton's statistical work is what Mr. Keynes called it—"almost valueless" and "actually misleading." We ourselves would omit the word "almost," for, in view of the claims made by the authors to complete mathematical accuracy, the discrepancy we have just tabulated destroys, it will be admitted, the whole value of their statistical memoir.

There is now a far graver charge to be made against Professor Pearson. Carelessness and statistical inaccuracy are serious enough, but we will now show that his table called "analysis of the trades," published by him in his letter to the *Times* of August 10th (for which, according to that letter, he alone is responsible) and also in his Supplemental Memoir, gives a misleading construction of the scheduled facts published in the report of the Edinburgh Charity Organization Society.

We must draw attention to the fact that this rendering of the Edinburgh statistics, which is the result of the method employed by Professor Pearson in constructing his table, has been already fully exposed by Mr. J. M. Keynes in the letter published in the *Journal of the Royal Statistical Society*, December, 1910, pp. 117-120.

Mr. Keynes, after showing that Professor Pearson constructed his table of averages, no matter whether the data for his calculations existed in each case or not, says: "Even if these supposed averages were true averages, they would not be very relevant to the matter in hand, for they do not attempt to discriminate between the drinkers and non-drinkers, and cannot help us, therefore, to determine the relative earnings of these two classes. Professor Pearson has classified the men into their trades, whether they were helpless invalids, lunatics, in regular or in casual employment, and has then put against them the wages they might have earned, not those which they actually do earn."

Mr. Keynes, after giving many examples of the real figures in the Edinburgh report and Professor Pearson's travesty of them, sums up by saying: "It is difficult to know how properly to characterize the work of a statistician who uses in controversy a table of this description with dogmatic assurance and without making plain to the reader the principles of its construction."

For the sake of those who have not the opportunity of consulting the original material, we must now go over part of the ground so ably dealt with by Mr. Keynes to explain the work of the Edinburgh report, and to show how completely Professor Pearson's mode of compiling tables and statistics, with or without the use of higher mathematics, has, unintentionally, resulted in a corrupt version of the facts.

The Edinburgh report consists primarily of an elaborate series of records put in schedule form, giving many social details of each family, of the parents, of the children (school medical details), and, finally, a brief account of the family in plain, and often painful, terms.

The column giving the work or trade of the father is immediately followed by a column giving either the weekly wage he earned, or often the full wage (trade union) earned in his trade, and occasionally—if his work was casual or irregular—the average weekly wage.

If, of course, as sometimes occurs in the schedules, the irregularity of work was such that no average could be struck, or the man was hopelessly out of work, or ill, or in gaol, or in an asylum, no wage, naturally, is stated. These facts of omission from the records, however, have been no bar to Professor Pearson, who has actually invented for 17.9 (say 18) per cent. of the cases in his table a wage for which the Edinburgh Committee's report not only gives him no justification, but by its verified wage table specially provides against such perversion of the facts. It is this last point which makes Miss Elderton's and his treatment of these statistics so particularly to be deprecated, for the Edinburgh workers not only give in the schedule of each case every detail in their power, but on this very question of wage earning they state that they went over all the facts again and finally, after further consultation with the employers, drew up a specially verified wage table, which they publish on page 18 of the report, and in which they specifically state for each trade the weekly average wage and the number of cases from their records for which alone their wage table is accurate.

Nevertheless, Professor Pearson, with what he and Miss Elderton speak of as "judicial calm," takes the average

wage rate, as accurately ascertained by the Edinburgh workers for only a limited number of men, and applies it haphazard to as many more cases as he thinks fit. It follows, of course, that as the most drunken workmen, being the most casual and irregular workers, naturally constitute the majority of cases in which no data exist, he, by gratuitously ascribing to these men the Edinburgh verified average weekly wage, raises the drinkers' side of the account to the level of the "less drinkers."

A more incredible act on the part of a mathematically exact statistician it is hard to imagine, and therefore we will proceed to give some illustrative cases of his method of dealing with wage and sobriety statistics in constructing his table, called by him "an analysis of the fathers' trades."

For the detailed examination of the trades of chimney-sweeps, blacksmiths, and bookbinders, we must again draw attention to Mr. Keynes's latest communication quoted above (*Journal of the Royal Statistical Society*, December, 1910, pp. 118-121), where the first examination of this matter was given.

Gasworkers.

The first trade we will take will be a numerically small one, that of the gasworkers, and we will commence our account of it by saying it was not one of those which the Edinburgh Committee verified. The table which follows, therefore, consists of a brief extract of the facts from the schedules as they were passed in the first instance by the committee and appear in the schedules of the report.

Gasworkers.

| No. in Edinburgh Report. | Wage stated in Edinburgh Report Schedule. | Comments Abbreviated from Edinburgh Report Schedules. |
|--------------------------|---|---|
| 65 | 23s. 4½d. | No suggestion of intemperance. |
| 226 | 24s. | " " " |
| 236 | 21s. 3d. | Drinks a little, but keeps pretty decent. |
| 412 | 25s. 6d. to 30s. 4d. | Sober. |
| 413 | 37s. 4d. | Sober. |
| 415 | 37s. 4d. | Sober. |
| 429 | 37s. 4d. | Sober. |
| 678 | 30s. | "Drink present." "Very little furniture." |

Professor Pearson, in his table, says that the Edinburgh statistics show *five* gasworkers all "sober" and earning an average wage of 27s., whereas the actual schedules of the report give, as we show in the above table, *eight* gasworkers of whom six are "sober" and two drink, and if we take the average of all their wages in the schedules (striking an intermediate wage of 27s. 11d. for No. 412) that is not 27s., but 29s. 9½d. To begin with, therefore, even this unverified table is constructively misrepresented by Professor Pearson in his analysis. One point which requires explanation is, why did he leave out the two drinkers? It is, of course, impossible for us to say, but we would point out that these two drinkers whose existence Professor Pearson ignored earned an average wage of only 25s. 7½d., whereas the six "sober" ones earned an average wage of 31s. 2½d. Thus the drinker drops 17.8 per cent. of the wage earned by the sober man, a result which, in full accord with Professor Marshall's position (*Times*, August 19th, 1910), directly contradicts Miss Elderton's and Professor Pearson's great generalization that the wage-earning capacity of the drinker and sober man is practically the same.

Coopers.

We will now take the men of another trade—namely, coopers. On the whole, they appear as a steady, sober class of artisans. The Edinburgh Committee went over the list, and finally verified the wages for six cases, striking the average weekly wage at 28s. 6d. Professor Pearson, with considerable "judicial calm," represented to the readers of the *Times* that the Edinburgh schedules give twelve coopers earning an average wage of 28s. 6d., which he simply borrowed from the Edinburgh Verification Table, and applied it to his twelve coopers wholly without justification, for the Edinburgh Committee state that it

only applied to six coopers. Nay, more, to compose his table of wage-earning capacity and sobriety he puts down opposite his twelve coopers that eight were "sober" and four drunken—a proportion, it will be seen, of two to one. Now, the Edinburgh schedules, when completely searched, show that instead of twelve coopers there are only eight, the details relating to whom are as follows:

Coopers.

| No. in Edinburgh Report. | Average Weekly Wage. | Comments from Edinburgh Report Schedules. |
|--------------------------|----------------------|---|
| 139 | 31s. | "Except for the daily beer at the brewery, he keeps temperate." |
| 150 | 31s. | Idio. "Well-kept family." |
| 209 | 22s.* | "Casual." "Sober." |
| 229 | Possibly 30s.* | Out of work; casual. Sober. |
| 360 | 31s. | Sober. "A nice well-doing family." |
| 388 | 20s. | Sober. |
| 499 | 28s. | "Drinks considerably." |
| 733 | 28s. | Apparently sober. |

* Excluded.

To return, Professor Pearson in his table says the Edinburgh statistics give twelve coopers, of whom eight, he says, are "sober" and four drunken, and that all these twelve earn 28s. 6d. a week, whereas the actual schedules of the report give, as we show in the above table, only eight coopers, of whom seven are "sober" and one drinks. If we now take the average of their wages as stated in the Edinburgh schedules, and if we exclude Nos. 209 and 229 as cases in which, owing to the irregularity of their work it is impossible to calculate their wage correctly, we are left with six coopers whose average wage, 28s. 2d., approximates to that given in the Verification Table of the Edinburgh Committee (also for six coopers), namely, 28s. 6d. This figure, 28s. 6d., Professor Pearson as before takes for his extra six coopers, four of whom, as we have just shown, have no existence in the Edinburgh records at all, but are imaginary. Of the two who do appear in the record—namely, 209 and 229, the two we excluded for the obvious reason that it was impossible to treat their cases with accuracy, the utmost that could be said for them is that, according to the table, No. 209 on the average might earn an average weekly wage of barely 17s., and No. 229 might from the data be estimated to earn an average weekly wage of barely 23s. In neither case do these two men earn anything like the wage Professor Pearson has presented them with—namely, 28s. 6d.; and, as for his four imaginary coopers, though he gives them 28s. 6d. per week, they cannot honestly be said to earn anything at all. Thus "scientific" statistics are made by Professor Pearson. But we must now take his views on the sobriety point. As stated above, he asserts in his table that, of his 12 coopers, 8 are "sober" and 4 drink, that is a proportion of 2 "sober" to 1 who drinks. The real fact is, as the Edinburgh records, which we quote above, definitely show, there are only 8 coopers altogether, and that, of these 8, 7 are sober to 1 who drinks. So that not only has Professor Pearson given an incorrect rendering of the Edinburgh statistics as regards the number of coopers and the wages they earned, but he has also represented them as containing a considerable proportion of drinkers (one-third), whereas they are distinctly above the average of sobriety in the terribly slum population of which they form a part.

Of course, had they been as drunken as he wrongfully asserts, they would, as a well-paid group, have materially aided his and Miss Elderton's conclusion that the drunken workman is as good a wage earner as the sober man.

The most salient point, however, about this particular case of the coopers' sobriety is that it demonstrates another grave feature of Professor Pearson's statistical methods—namely, the creation of cases which are not in the Edinburgh schedules at all. In this instance Professor Pearson first created four individuals who have no existence as coopers, whatever they may have had as labourers, etc.; secondly, he represented that three of these imaginary coopers were drinkers; and, thirdly, accorded to each and

all of them, a wage of the amount which belonged to other (real) individuals whose wage earning had been accurately ascertained by the Edinburgh Committee. We shall see that this "mathematico-statistical" method is not an exceptional instance, but that it is habitual with Professor Pearson, and that it is one of the chief factors which has led him necessarily to the erroneous conclusion that the wage-earning capacity, physique, and mentality of the drunkard are on a par with those of a "sober" man.

Painters.

We will now take a numerically stronger trade—that of the painters, a trade in which irregularity of work is very common, and in which, unfortunately, alcoholism is also very common. The total number of painters given in the Edinburgh records is 38. On going through the following table, which is constructed from the report schedules, we find that there are 24 cases in which a weekly average wage can be accurately calculated. The Edinburgh Committee give in their Verification Table 23 such cases, and the verified wage rate for these 23 cases they find is 25s. 6d. We obtained almost the same average wage by our calculations of the 24 cases in which such calculations were possible from the data in the schedules. We take the Edinburgh verified result—namely, 25s. 6d.—as the corrected weekly average wage for the 24 painters.

Now Professor Pearson, as we said just now, states in his wages and sobriety table that there are 37 (really 38) painters and that they earn the average weekly wage, which, as usual, he borrows from the Edinburgh Verification Table—namely, 25s. 6d. In other words, he deliberately puts this figure opposite every man, in spite of the data which are given in the schedules of the Edinburgh report (see our table below), and in spite of the direct statement of the Edinburgh Verification Table that their average weekly wage only applies to 23 cases and not to 38. To our minds such a statistical "method" is scientifically inexcusable. We will now come to the question of the average weekly wage earned by the drinking painter as against the sober painter. Of course, Professor Pearson's statement on this point in his table is wholly valueless, because, as we have just seen, he entirely neglects the data of the Edinburgh report, but we will first note that he asserts that the proportion of drunken to "sober" individuals is that of 14 to 23. Even this is not correct. The truth is that if the whole number of painters be taken, as in the table given below, the average weekly wage put down where it can be ascertained correctly from the data in the schedules, and the remaining cases denominated by a statement of the reason which necessitates their exclusion, it will be found that, as stated just now, there are 24 cases, and that, instead of the sober to the drunken being only as 2 to 3, according to Professor Pearson, they are in fact as 11 to 13, even including 2 "doubtful." And in the second place it will be found that the average weekly wage comes out for the "sober" painter at 28s. 10d. and the drinker at 20s. 0½d. We will now give the table of these facts, putting the cases into the categories of "drinking," "doubtful," and "sober," marking with an asterisk the cases made useless by incompleteness of the data. (See table, p. 80.)

The facts, therefore, as regards the sobriety of the three classes of painters are:

| | |
|------------------------------|-----------|
| Sober—average weekly wage... | 28s. 10d. |
| Doubtful " " " " " " | 26s. 5d. |
| Drinker " " " " " " | 20s. 0½d. |

It will be seen from the comments we have extracted from the Edinburgh schedules that Professor Pearson has bestowed a wage of 25s. 6d. per week on fourteen individuals concerning whose real wages either nothing whatever is known, or that, whatever they may have earned when they were at work, those industrious occasions were so rare (and sometimes rendered so impossible by the man being in prison) that no average weekly wage could be accurately ascertained. Nevertheless, the exigencies of Professor Pearson's argument are great, and he accords to each of these individuals 25s. 6d. per week. Again we say that his "method" of representing the

* The Edinburgh wage table does not identify by the report numbers which were the 23 individuals whose wages they verified, but obviously they must be in our 24.

Painters (Wages and Sobriety Table).

| No. | Drinkers. | Doubtful. | Sober. |
|-----|---|--|--|
| 27 | Wages not known* | — | — |
| 31 | 10s. | — | — |
| 34 | 36s. Irregular* | — | — |
| 53 | 36s. Irregular. "Out of work" | — | — |
| 61 | 20s. 9d. | — | — |
| 88 | — | 30s. Irregular, out of work* | — |
| 101 | 25s. average for year | — | — |
| 130 | 12s. | — | — |
| 152 | No average possible* | — | — |
| 169 | — | 50s. Apparently does not drink to excess | — |
| 233 | — | — | 27s. |
| 271 | — | — | Wages unknown. An unemployable.* |
| 289 | — | — | 25s. |
| 292 | — | — | 37s. (34s. to 40s.) |
| 296 | — | — | 30s. |
| 321 | — | Irregular. No average possible* | — |
| 411 | — | — | 21s. average. |
| 417 | 16s. Casual out of work* | — | — |
| 452 | 21s. | — | — |
| 464 | — | Incapable. No average possible* | — |
| 513 | Casual. filthy, drinker, in and out of work* | — | — |
| 539 | 10s. 5d. | — | — |
| 545 | Casual. Very intemperate, convicted 27 times* | — | — |
| 566 | 23s. 1d. average for year | — | — |
| 574 | — | — | Paralysed. Unable to work three years. |
| 577 | — | — | "Steady, earning a good wage," 30s. 9½d. (average between maximum 36s. 1½d. and Edinburgh average rate). |
| 623 | — | — | 20s. 7½d. (25s. to 36s. 1d.) |
| 658 | Casual. No average possible* | — | — |
| 675 | Irregular. Convulsion* | — | — |
| 696 | — | — | 18s. |
| 694 | 31s. 9d. (27s. 6d. to 36s.) | — | — |
| 695 | 20s. 9d. | — | — |
| 707 | — | — | 36s. |
| 712 | — | — | 26s. 11d. |
| 713 | 24s. | — | — |
| 735 | 22s. | — | — |
| 736 | — | — | 30s. 9d. |
| 769 | — | 23s. Formerly intemperate | — |

* Excluded.

Edinburgh data constitutes a misrepresentation of the published facts.

Moreover, exactly as in the case of the coopers just described, of these no'er-do-well cases rejected by every statistician except Professor Pearson, it happens that no less than nine are proved drinkers, three are doubtful, and only two sober. It is, again, easy to see that by giving the drunkards—one of whom was convicted twenty-seven times—the full average wage, which they never earned, Professor Pearson and Miss Elderton had ultimately no difficulty in "proving" that a drunkard was just as good a wage earner as a sober man.

The real fact, however, is that the drunken painter earns about 30 per cent. less than the sober man.

Masons.

Masons form a very distinct, well-paid body of men, whose work is easily defined and cannot be confused with other callings, such as masons' labourers, masons' black-

smiths, bricklayers, etc. The schedules of the Edinburgh Report give the facts concerning fourteen masons. Professor Pearson's table, which he tells the public he constructed also from the Edinburgh schedules, contains, however, no less than twenty-two masons. Here, then, he has created eight imaginary masons and has bestowed upon each of them an average weekly wage of 34s. 1d. This average weekly wage he borrowed, as usual, from the Edinburgh Verification Wage Table, but he does not tell his readers that the Edinburgh Committee were not able to verify that wage-rate accurately for more than ten individuals; consequently, Professor Pearson applied this wage-rate without the slightest justification to two individuals, Nos. 654 and 752, for whose cases no data exist in the Edinburgh Report, and to eight others who exist only in his own imagination. To illustrate this sort of thing, which we are asked by the *Times* and "trade" newspapers to respect and admire as the product of scientific and higher mathematical accuracy, we will now give a table of the facts relating to the masons who really are contained in the Edinburgh Report.

Masons.

| No. in Edinburgh Report. | Average Weekly Wage. | Comments from Edinburgh Report Schedules. |
|--------------------------|----------------------|---|
| 137 | 28s. | Drinks. |
| 285 | 34s. | Drinks hard. |
| 321 | 39s. 3d. | Casual; steady. |
| 323 | 36s. | "Work irregular probably because of intemperance." |
| 340 | 38s. 1d. | "Steady good workman" now "out of a job." |
| 365 | 21s. | Irregular; "drank now and then." |
| 367 | Average impossible* | Irregular; ill six months; teetotaler. |
| 414 | 28s. 11d. | Wages 35s., but works only forty-three weeks; "has drunk a good deal lately." |
| 460 | 36s. | Drinks at times. |
| 497 | Average impossible.* | Drunken; idle for four months. |
| 537 | 38s. | Sober. |
| 547 | 33s. 8d. | Sometimes drinks. |
| 654 | Not known* | Sometimes drinks; out of work. |
| 752 | Not known* | Alcohol habits not given. |

* Excluded.

From the list we have just given it appears to us that nine should be described as drinkers, four "sober," and one unknown. As far as wages are concerned, Nos. 367, 497, 654, 752 must be excluded. It is very instructive to read in Professor Pearson's "wage table" that for this class of highly-paid work there were, according to him, many more drinking masons, namely, seventeen drinkers and only five "sober." This instance makes it especially easy to see how the statistical methods he employs, and above all the free additions of alcoholic cases he creates in the mason world, raise the wage-earning efficiency of the drinker to that of the sober workman. The real facts concerning the sobriety of the two classes when taken from the list given above are as follows:

| | |
|-----------------------------|--------------|
| "Sober"—average weekly wage | ... 38s. 2d. |
| Drinker | ... 31s. 2d. |

Statistically it is interesting to see that the drinker drops 18 per cent. of the high wage earned by the sober mason, and that this percentage loss by the drinker corresponds with the drop shown to occur in the other trades.

Porters.

We will now take the trade of porters. Porters are referred to in the Edinburgh report under the terms porter, coal porter, street porter and railway porter. The last, the railway porter, forms, of course, a distinct class of worker of fixed and regular employment, about whom there can be no possibility of error in compiling statistics if such compilation is made with even a faint approach to accuracy. The Edinburgh Report, as Mr. Keynes pointed out in his second crushing indictment^o of Miss Elderton and Professor Pearson's statistical methods, contained

* Journal of the Royal Statistical Society, December, 1910, p. 119.

reference in its verified wage table to one railway porter only, and the schedule stated that his wages were 18s. a week. In the Edinburgh wage table, by a misprint, this was made to read 28s. Professor Pearson multiplies this unique Edinburgh railway porter by nine, and gives them all—the one real one, another real one who is in the schedules, and seven imaginary ones—the misprint average wage of 28s. This creation of individuals who are not in the Edinburgh statistics cannot always be due to carelessness, and in this case particularly so, for it is quite clear that as he copied the misprint wage—28s.—he could only have derived it from the wage table given by the Edinburgh Committee. If he had really constructed his table from the schedules he would have found there the correct figure—namely, 18s.—opposite this man (No. 57 in the schedules). Then again, the Edinburgh wage table which he copied states quite correctly that their wage only applied to this one railway porter, and the schedules contain only one more. Where did he get the seven others from? They must have been creations, for he could not even have imagined that he saw them in the records. His never-failing imagination, however, enabled him to tell the *Times* readers (August 10th, 1910) that two of his nine railway porters drank and seven were sober.

To return now to the other kinds of porters—namely, porters, coal porters, and street porters—we have put them together in one table as below. Of porters thus grouped we find only thirteen in the Edinburgh statistics, and no other porters are mentioned therein. Professor Pearson, however, says there are seventeen. He, therefore, has invented for this trade four imaginary individuals, although asserting throughout that he is quoting the Edinburgh figures. The Edinburgh Committee verified the wage rate, showed that for eleven individuals this could be done, and the average weekly wage came out at 20s. 6d. Of course Professor Pearson, to construct his wage (and sobriety) table for the *Times* and his Supplemental Memoir, gives this average weekly wage of 20s. 6d. to all his 17 porters, the 13 real ones, and the 4 imaginary ones, in spite of the Edinburgh data. Turning now to the sobriety question, Professor Pearson makes out that of his 17 porters 9 were sober and 8 were drinkers, each of whom gets according to him 20s. 6d. Thus for this relatively low wage he naturally obtains by this "expert" method a practical equality between the wage earning of the drunken and of the "sober" porter respectively. The facts, however, are given in the table below.

Porters.

| No. in Edinburgh Report. | Average Weekly Wage. | Comments from Edinburgh Report Schedules. |
|--------------------------|----------------------|---|
| 43 Coal porter... | 24s. | "Sober and steady." |
| 343 Porter ... | 17s. | One worker says there is drink, and the police give an indifferent character. |
| 167 Street porter | 16s. | Casual. Drinks. |
| 203 Coal porter... | 18s. 25. | Sober. |
| 260 Porter ... | 19s. | "Teetotaler"; "consumptive." |
| 331 Coal porter... | 19s. | "wife drinks a little." Casual. Drunken. |
| 336 Porter ... | 12s. | "Teetotaler; eyesight failing." |
| 338 Porter ... | 22s. | "Sober." |
| 439 ... | Not known* | Drunken. Out of work. |
| 481 Porter ... | 28s. | "Temperate." |
| 527 Porter ... | 20s. | "Drinks." |
| 555 Coal porter... | 21s. | "Occasionally intemperate." |
| 696 Porter ... | 18s. | Casual; hard drinker. |

* Excluded.

From the table it will be seen that there are, as a matter of fact, six sober and six drunken porters, accepting the figures of the schedules and excluding No. 439, for which the data do not appear, but whom, though indeterminate and drunken, Professor Pearson has rewarded with a wage of 20s. 6d. a week. If the full wages of the two marked "casual"—namely, Nos. 167, 331—are reduced by one-

fourth to obtain an average, the sobriety facts are as follows:

| | |
|-----------------------------|---------------|
| "Sober"—average weekly wage | ... 20s. 6d. |
| Drinker " " " | ... 17s. 0½d. |

Statistically it is again interesting to see that the drinker in this class drops about 17 per cent. of the rather low wage earned by the sober porter.

We do not propose to weary our readers with any further examination of Professor Pearson's so-called wage (and sobriety) table, which he professed to construct from the Edinburgh statistics.

We have taken these trades of "gasworkers," "coopers," "painters," "masons," "porters," as examples for detailed examination only, because discrepancies from Miss Elderton and Professor Pearson's statements were so obvious among them, just as Mr. Keynes was similarly attracted by the "sweeps," "railway porters," "bookbinders," and "blacksmiths."

Since the selection of these nine trades was made purely at random, they may be taken as fair examples of the whole number, and it will be then realized what the Edinburgh records have suffered at the hands of Miss Elderton and Professor Pearson.

CONCLUSION.

Practically Miss Elderton and Professor Pearson's work amounts to a consideration of two subjects:

1. Wage-earning capacity of sober and drunken workmen respectively.
2. Effect on offspring of alcoholism in their parents.

1. Wage-earning Capacity.

As regards the first of these subjects, Miss Elderton's and Professor Pearson's "startling" conclusion "that the drinking parents are in physique and mentality the equal on an average of the sober," or their still more "startling" addition that "the drinking parents" are "possibly a little above the standard of the sober," though having a biological application, is a question of statistics.

Our own investigation (see previous pages) of the schedules fully confirms the criticisms of Professor Alfred Marshall and Mr. Keynes, who sneered at by Professor Pearson as "The Cambridge Economists," and accused by an anonymous writer in the *Times* and *BRITISH MEDICAL JOURNAL* of being "over-hasty" have stated as statisticians their estimate of Miss Elderton and Professor Pearson's work that it is worthless. Obviously this is so, for as we have shown, these authors only arrived at their generalization by three erroneous methods:

1. Disregarding the facts and precautions against error published and provided by the Edinburgh Committee.
2. Imagining and publishing statistical data where none exist in reality.
3. Disregarding the discrepancies between the conclusions arrived at by themselves.

Moreover, the Edinburgh schedules show that the drunkard earns a notably (between 15 and 20 per cent.) lower wage than the sober man.

Consequently Miss Elderton and Professor Pearson have not only erroneously represented the facts, but they have concealed the truth by a mass of mathematically formulated conclusions which, being calculated on misstated data, are necessarily also erroneous.

2. Effect on Offspring of Alcoholism in their Parents.

Just as the first great generalization of these authors—namely, that the drunken workman was probably even of a little more value to the State than the sober workman—has been shown to be untrue, so also are their conclusions as to the biological effects of parental alcoholism worthless. For, to trace the effects of a drug through parents to children, it is necessary to choose representative material, to provide control observations, to know the relation of the incidence of the drug-taking to the birth of the children, and to be scrupulous in terminology.

Not a single one of these conditions have these writers observed, and yet their "Memoir" has been put forward with an assumption of accuracy and truth we have never seen claimed for any scientific investigation before.

It seems to us, therefore, that these writers constitute a national danger, that their writings, whether on alcohol or tuberculosis, or any of the national questions to which

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bowels on the day following each dose, but there was no sign of irritation of the kidneys or other unpleasant symptom. At the end of the month the oil was discontinued and perchloride of mercury was given in conjunction with perchloride of iron three times a day.

In using this method of treatment it is important to remember that the turpentine must not be given in smaller quantities than those recommended above, and that it should be combined with an equal quantity of castor oil and given once in the twenty-four hours at bedtime. Our object, which can only be attained by a substantial dose, is to act upon the bowels and not upon the kidney. To be of use, therefore, the dose must be an aperient one, and as turpentine is by no means a drastic purgative it may be given in this quantity with perfect confidence that we are doing no harm to the patient as long as it produces an aperient effect. If it do not produce this effect, the dose should be increased or the draught, as above, given in the morning as well as at night. In the case of patients of the age of the child referred to I have often given half an ounce of both oils every night with great benefit. It is only when the remedy does not act upon the bowels—in other words, when the dose is insufficient—that any risk is run of irritation of the kidneys; but even if this symptom occur it is of no consequence, as it ceases quickly when the remedy is discontinued. I am convinced that in laying aside this method of medication oculists have let slip a safe and useful remedy which is capable of doing them good service in obstinate inflammatory or semi-inflammatory conditions of the eye such as that which forms the subject of this memorandum.

EUSTACE SMITH, M.D., F.R.C.P.,
Senior Physician to the East London Hospital
for Children.

A CASE OF ECLAMPSIA TREATED BY SALINE INFUSION.

THE patient, a poorly nourished woman, aged 34, had previously four confinements, all normal, and one miscarriage. Her present confinement at eight months occurred before the arrival of the midwife, who noticed nothing abnormal, and after attending to the mother and child left. Five hours later the patient was seized with convulsions; the midwife was recalled, and sent for me.

When I arrived the patient was unconscious, pale, pulse imperceptible at the wrists, the heart beats irregular in force and frequency, but very rapid, about 200 per minute; the extremities were cold and flaccid, respiration irregular and stertorous. (There had been no excessive haemorrhage.) At intervals of from five to ten minutes she developed convulsions of an epileptiform character; they commenced with a tonic stage, during which the face became cyanosed, the limbs rigid and hands tightly clenched, and blood oozed from the vagina.

A clonic stage then commenced, during which the convulsions were general; the duration of the whole fit was about five minutes. Hot-water bottles were placed at her feet, and I proceeded to infuse a solution of normal saline at the rate of about two pints per hour into the subcutaneous tissue of the axillae and thighs, the total amount infused being 4 pints. During the infusion her condition gradually improved. She had one or two more fits, but these became much less severe. When the infusion was stopped she became conscious, though very drowsy, her respirations quieter and more regular, the pulse steady and beating at the rate of 90 per minute. There was no subsequent return of the fits. The urine examined in a specimen obtained by catheter after the infusion of saline showed 3.5 per 1,000 by Esmarch's albuminometer.

The points of interest in this case are, I think, the length of time after delivery before the onset of any symptoms—namely, five hours. When the infusion of saline was commenced the patient was in *extremis*, and the case if left to itself could only have terminated fatally, and that in a very short time. The patient ultimately made a very satisfactory recovery.

Monmouth. A. KEITH ARMSTRONG, M.R.C.S., L.R.C.P.

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heard of this use of turpentine—none, with the exception of Sir John Tweedy, who had ever used it himself in his practice. Sir John learnt it, he told me, from the late Mr. Wharton Jones, with whom it was a favourite remedy. The following case may be interesting to oculists, as it shows very clearly the remedial value of the oil in cases where mercurial treatment has proved disappointing.

Some time ago I saw, with Dr. Leslie Earle, a little girl of 10 who, after an attack of measles some few months previously, had begun to complain of failure of sight. Dr. Earle, finding the case little amenable to treatment, had called in Sir John Tweedy, and by his advice the eye had been treated with mercurial inunctions, with the addition of iodide of iron internally to improve the general health. The patient was naturally hypermetropic, and the retina, as Sir John was good enough to report to me, was in a congested oedematous state in the neighbourhood of the macula—a condition which hardly, indeed, amounted to retinitis, but was a cause for anxiety as the child's sight was growing steadily worse and her general health had begun to suffer. It was for this latter condition that I was asked to see the patient. I found her thin, anaemic and fragile looking, and was told that a blood count had shown a great excess of large lymphocytes (41 per cent.). I could, however, discover no sign of organic disease. With Sir John Tweedy's consent the form of medication was altered. The inunctions were stopped and the child was made to take two drachms of oil of turpentine with an equal quantity of castor oil every night at bedtime. This change was followed in the course of only a few days by great improvement in the sight and general health. The normal appearance of the retina, indeed, was only slowly restored, but the acuteness of vision quickly returned and the sight was soon as good as ever. Some months later I heard that the condition of the patient both as to sight and general health was in every way satisfactory. This striking improvement in both local and general conditions followed so quickly upon the change in treatment that we all attributed it, and I think rightly, to the action of the turpentine. The child took the remedy continuously every evening for one month. It produced one action of the

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PARENTAL ALCOHOLISM AND HEREDITY.

A MEDICO-SOCIOLOGICAL DISCUSSION.

At the ordinary meeting of the Society for the Study of Inebriety, held at the rooms of the Medical Society of London on Tuesday, January 10, the subject for discussion was "The Influence of Parental Alcoholism on the Physique and Ability of Offspring." It was opened by the President of the Society, Dr. Theo. B. Hyslop, F.R.C.P.

THE OPENING PAPER.

Dr. Hyslop, in his opening, reminded his hearers that the subject had been treated from many and diverse points of view, but the aim of the Society was to arrive at the whole truth. Admittedly discussions on alcohol were sometimes characterised by extravagances, but personal conflicts did no harm so long as they did not obscure the matter discussed. It behoved students of the question to divest themselves for the time being of all their previous notions and beliefs, and endeavour to hark back to the beginning, so as to build upon what was really sound. The Society was in sympathy with the aims of the Eugenics Laboratory, but did not approve of its methods; and he hoped that friendly collaboration would enable students to avail themselves of the vast amount of earnest work which had been done by the best brains of the day. The problem was not provable nor capable of advancement by rhetoric; indeed it might not be solvable even by statistics. The problem could be stated as follows: "Does parental alcoholism—apart from parental degeneracy, which, together with a tendency to alcoholism, is heritable—influence the physique and ability of offspring?" Side issues must be eliminated, and one should equalise or exclude such variations in environment as might possibly affect the germ-plasm of the parents or the offspring independent of the influence of alcohol itself. But it was practically impossible to find a definite uniformity of phenomena on which to base statistics which should be accurate in every particular. All variations in environment could not be excluded, nor could the possibility of the intensification of degeneracy in successive generations due to the continuance of the same or different environmental defects. In order to better define standards of parental degeneracy and alcoholism, one must note the sex, age at incidence, and evidences of inheritance, as well as the nature and degree of the defect.

THE WORK OF THE GALTON LABORATORY.

The Galton Laboratory had brought into prominence the association of alcoholism and degeneration, as contrasted with the causation. But the question as to which came first had not yet received the necessary attention, and as an asylum physician he was confronted with the difficulty of deciding which was cause and which effect. Thus it would be seen how difficult it was to find reliable data on which to base statistics. The tendency to alcoholism may be latent in the parent until accidentally revealed, after transmission of the tendency to the child. At first he believed that parental alcoholism should invariably precede the birth of the child to transmit the taint, but he now saw that such a stipulation would lead to the suppression of half the truth, and provide a source of error unless one distinguished between parental alcoholism *per se* and parental degeneracy *plus* a psycho-neurotic tendency to alcoholism. The assertion that alcohol at festivals was the source of imbecility in the offspring had not, he contended, been proved, though probably more conceptions took place at such times.

INTRA-UTERINE CHANGES.

Moreover, little was yet known of the influences, alcoholic or otherwise, which determined conception. With

regard to the point concerning the influence on the child when alcoholism was present in the mother, as compared with its presence in the father, the matter was not of great importance, compared with the researches in which small quantities of alcohol were given to animals, for probably the offspring had not inherited a parental neurosis or psychosis, to which the effects of alcohol had been added and transmitted to the offspring. He accepted Laitinen's statement that the number of young of those animals which received alcohol was somewhat larger, but they were much weaker than in the case of the young of animals not treated with alcohol. For a long time he, Dr. Hyslop, had attributed mental and physical defects to parental alcoholism, but careful study of the investigations of the members of the Eugenics Laboratory led him to try to discard his previous conceptions; and he could not convince himself that in any one case other factors than alcohol had also been at work; there might have been a direct inheritance of a neuro-psychosis as well as alcohol. Instances of germ-plasm in the stock were instances of heredity pure and simple, and they ought, for the solution of the problem, to be rigidly excluded. Yet that might result in the elucidation of but half the truth. His experience at present led him to the belief that parental alcoholism accentuated the downward trend, and that with each successive generation the period of exemption from alcoholism and degeneracy was shortened, so that the offspring became alcoholic or degenerate at a relatively earlier age.

ALCOHOL AS A FACTOR IN DEGENERACY.

In families prone to degeneracy alcohol appeared to put the finishing touches; it would readily set alight and determine the existence of a neurosis or psychosis which might otherwise be on the wane; and it also seemed to render the offspring more liable to suffer from the transmission of such degeneracy. The last report from the Galton Laboratory claimed that alcohol was, in its pernicious forms, consequent on, and not antecedent to, mental defect, and that might be true. "One man's food another man's poison" referred to alcohol, and it was difficult to differentiate the degrees of alcoholism. In asylum practice it was comparatively seldom that one found the various lesions so common to alcoholism in the sane. Possibly that was because alcohol selected the least stable of the bodily systems in a given individual. The system might be, by its inherent weakness, more susceptible to attack, or it might be less able to eliminate from its substance the effects of toxic action. It would aid the solution of the problem if there could be found well-defined and accurate instances in which the defect in the child could be proved to be due to parental alcoholism without the aid of any other causal factor. Until that could be done, and until such instances could be multiplied, any statistics could only assist in the making of hazardous half-guesses, which might lead to misinterpretation and the spreading of doctrines and lines of action which might be for the good, but also possibly for the ill, of the community.

A GUARDED OPINION.

Mrs. Scharlieb, in response to the President's invitation, said she would not like to advance any views on the subject after the point of view so ably presented by Dr. Hyslop. She would prefer to think the matter over, but her view had always been that alcoholism in the parent was likely to lead to degeneracy and feeble-mindedness and crime in the offspring.

SIR VICTOR HORSLEY'S CONCLUSIONS.

Sir Victor Horsley, F.R.S., suggested that someone from the Galton Laboratory should speak first, but he was informed that none of those invited from that institution had come. He regretted that the discussion was likely, on that account, to be one-sided. The position of the subject which Dr. Hyslop had placed before the meeting was totally different from that which the Galton Laboratory advanced; the former was a philosophic consideration of the subject, and it showed that the matter could be considered from two points of view, viz. as to whether children did suffer directly from alcoholism in the parent, or whether they might be simply exhibiting the inheritance of some psychoneurosis. He (Sir Victor) proposed to deal only with the question of parental alcoholism *per se*, a point on which much scientific work had already been done. And that work all went to show, until last May, that alcoholism in the parent was followed by adverse consequences to the offspring.

THE PEARSON-ELDERTON MONOGRAPH.

But in May last the world was much startled by the paper published by Miss Elderton and Prof. Karl Pearson—startled from the sociological and toxicological points of view; sociologically because the memoir summed itself up in two statements that, sociologically speaking, drinking working men were as good as others, physically and mentally as good, if not a little better. The toxicological statement was that examination of children of school age showed that those children were not suffering from any poison which the parents had taken. What he (Sir Victor) proposed to lay before the Society by way of fact Dr. Mary Sturge was responsible for as well as himself. Yet in all their letters to the *British Medical Journal* the Galton Laboratory left out all mention of his colleague, Dr. Mary Sturge, though her work on the subject, had been proceeding for the last twenty years. When the Memoir No. X. was first published, Prof. Marshall at once pointed out in the *Times* that the treatment of the data by Prof. Pearson as to whether the drunken workman earned as good wages as the sober workman was not correct, statistically speaking. In the next issue of the *British Medical Journal* Dr. Mary Sturge and he would show that Miss Elderton and Prof. Pearson had treated the Edinburgh statistics in a most unjustifiable manner.

AN ATTACK ON PROFESSOR PEARSON'S DATA.

Prof. Pearson published in the *Times* what he called a wage table; he grouped the trades of the parents of the children together, and then attached to each trade a definite wage. Then he gave a statement of the number of the parents who were sober and the number who drank alcohol. Those statistics were absolutely untrustworthy, as proved by Mr. Scanes, in the *Statistical Journal*, last summer and last December. It would be found that Prof. Pearson had put down, say, ten carpenters, and put to them an average wage. It was scarcely credible, but what the professor derived his information from was not the schedules of the Edinburgh report, but the table which the Edinburgh workers calculated by repeated investigation; not for ten cases, because the data were insufficient, but for six cases. Prof. Pearson actually took that figure and gave it to all the ten. But, as would be seen in the paper on Saturday, the professor added to the table men who did not exist. A case in point was that of railway porters. Mr. Scanes pointed out that Prof. Pearson said there were nine railway porters—two were sober and seven drank. But as not more than two railway porters were mentioned anywhere in the report, Prof. Pearson invented seven and gave them the accurate wage rate; not that mentioned

in the schedules of the report, but one in which the Edinburgh table was misprinted ten shillings higher than it really was. Prof. Pearson stated all those railway porters to be earning 28s. a week, whereas the fact was there was one railway porter and he was earning 18s. a week.

STATISTICS.

The wholesale manipulation of the Edinburgh statistics was a discredit to statistical science. When the persons who drank were put on the opposite side to those who were relatively sober, it was found that the sober workman earned from 15 per cent. to 20 per cent. more than did the drunken worker. Thus he did not hesitate to characterise the generalisation in Prof. Karl Pearson's paper as absolutely untrue. With regard to the point as to parental alcoholism *per se* and its influence on the children, the curves and mathematical tables in that memoir were absolute deception—it was the only word he could apply to them—because they professed to be accurate mathematical determinations of the conditions of the children according to whether the parents were teetotalers, sober people, or excessive drinkers in various degrees. As Prof. Marshall pointed out last July, it was essential to know whether the parents were alcoholic or not; in other words, until the incidence of parental alcohol was determined, no one knew to what category those children belonged. Yet Prof. Pearson had assumed that he knew; the facts were not in the Edinburgh Report, and no one knew anything about Miss Dendy's figures—they ought to have been published long ago. Naturally, it was absolutely necessary to know whether a parent was alcoholic or not. Dr. Sturge and he had for several weeks written controversial letters in the *British Medical Journal* to extract from Prof. Karl Pearson essential facts, but each week he put them off with some statement about the number of children the alcoholic might have. This week Dr. Sturge and he had again asked for figures, and if he did not publish the figures in the *Journal*, they invited the readers not to believe him at all.

TEETOTALISM.

He (Sir Victor) mentioned the word "teetotal," and he did so for a definite reason. In their Memoir, Miss Elderton and Prof. Pearson said that the number of teetotalers was so small—which was true, as only nineteen teetotalers could be found in 781 families—that they had merged the teetotalers into the figures for sober people, and they could not deal with them separately. But they had dealt with them separately, and not only in their tables at the end of their paper, but even in the current issue of the *British Medical Journal* there was a new table published by Prof. Pearson to depreciate teetotalers, in which he compared the children of teetotalers with the children of alcoholics of various degrees, and put at the top of the series "1,000 children." The facts were that perhaps he had twenty-five children to put into the teetotal column. In his Memoir he said the number was too small to deal with, but later he dealt with them. That was not scientific good faith. The whole of that Memoir was, as Sir Thomas Whittaker said, a mathematical superstructure on a rotten foundation, and the rottenness was demonstrated increasingly the more it was looked into.

INSANITY AND ALCOHOLISM.

Had there been time he would have liked to deal with the point that the asylum evidence seemed to support the Galton theorists; but their last Memoir on extreme alcoholism had nothing to do with it. But the evidence of Dr. Mott, who did know what he was talking about, must be gone over from the point of view of the person who was admitted into an asylum and remained there a number of years,

and who would not have the same acute visceral lesions as would the person who died from acute alcoholism. In national degeneration there were many factors, and the Society for the Study of Inebriety had the merit of investigating one of them—alcohol. And its work would continue, and would not be hampered by the publication of memoirs of the kind he had referred to, which were naturally welcomed by certain interested persons in the community, and, he was glad to say, they would not go without an answer.

SOME GENERAL EXPERIENCES.

Mr. M. Ryley related a number of instances in his own experience which showed that alcoholism was a transmitted taint. In one case the whole of the female branch of a family were intemperate, following the vice in their father, and they all killed themselves. In a similar clear case the lady was almost a degenerate, and was bereft of memory. When the two elder members of a family were conceived the father was very fond of stimulant, and they were addicted to alcohol, but the younger members of the family were abstainers. Another case was that of a judge who took much alcohol for some years before he died, and his daughter was constantly under treatment in various ways for alcoholism, and eventually died from it. It had been urged by people that alcoholism was not hereditary because it did not show itself until drinking commenced. That was about the same as saying that gunpowder was not dangerous because it was inert until a lighted match was applied.

DR. SULLIVAN'S CONCLUSIONS.

Dr. Sullivan (a prison physician) said the initial difficulty was to understand what was meant by alcoholism when speaking of it as a cause of degeneracy in the offspring. Chronic alcoholic poisoning caused more or less durable disorders, and, in extreme cases, led to death. To be effective in the next generation it must have existed in the parent some time before conception. Chronicity was the keynote, and the most illuminating material was that in which ordinary people had had normal healthy children, had later taken to excessive indulgence in alcohol, and then had defective children. Prof. Pearson's idea of alcoholism, that it was when the person drank more than was good for him economically or for the proper upkeep of the home, would not do. Prof. Pearson was very apt at criticising other people's evidence, yet on such a basis he said that in the Edinburgh school 34 per cent. of the mothers of the boys and 64 per cent. of the fathers were suffering from chronic alcoholism. There was a residue of medical evidence showing filial defect following alcoholism in the parent, but there was great need for experimental corroboration. Prof. Pearson assumed that drunkenness was evidence of chronic alcoholism—quite a fallacy. A much surer basis was the occurrence of delirium tremens, and it had been shown by statistics in 1906 that 60 per cent. of the males and 30 per cent. of the females who had delirium tremens had never been convicted for drunkenness or anything else. Prof. Pearson suffered from the disabilities of people who dealt with statements of which they had not first-hand knowledge. It was in the children of those who drank industrially rather than convivially that evidence of defect due to alcohol would be found.

EXPERIENCE VERSUS THEORY.

Dr. Claude Taylor contended that experience was worth something, for it observed life over considerable periods and with many ups and downs. Prof. Pearson's conclusions might lead to unjustifiable measures in the matter of segregation, many of the persons apparently not being

far removed from the normal. He was not prepared to base conclusions on statistics which had been shown to be in so many ways unwarranted.

The Rev. Canon Horsley thought that long association with people of a locality counted for more than a study of statistics. The children of tipplers were invariably undersized, and the earlier children of a marriage were stronger than those born after drinking habits had become more confirmed. Moreover, the children of alcoholic parents showed increased excitability and loss of self-control at puberty.

DR. HYSLOP'S REPLY.

Dr. Hyslop, in his reply, said that most medical men did not know what the problem was. Gratitude was due to Sir Victor Horsley and Dr. Mary Sturge for preventing statistics founded on wrong data and imperfectly digested being palmed off on the public without contradiction. He agreed that experience was worth more than statistics, for the latter paved the road to delusion. The great lesson which had been learned—and he emphatically repeated it—was that no person who had the slightest predisposition to any psychoneurosis should touch alcohol. He appreciated Dr. Laitinen's work very much, and he did not quarrel with his statistics, but he considered the time was not yet ripe for the acceptance of all his data. Moreover, Laitinen did not differentiate between the purely alcoholic parent and the alcoholic parent who also had a degenerative tendency.

CRIMINALS' BRAINS.

MUCH has been written about the external aspects of the criminal; so much, indeed, that ordinary people are almost afraid to look at their nearest and dearest lest the shape of the cranium, the position of eye or ear, the curve of the nose, may indicate some criminal tendency. Doubtless we are all, under certain circumstances, potential criminals. There are moments when we wish the death of any one who has, or whom we imagine to have, wronged us. If envying our neighbours' superior prosperity be a potential theft, as strict moralists tell us, then none of us are quite guiltless of robbery. But that is a different matter from carrying our vague envies and enmities into actual murder and theft. The man who does that is clearly one in whom the balancing characteristics of justice and pity on the higher plane, and caution and cowardice on the lower, are evidently lacking. It would be interesting to know if the truly criminal characteristics—those which find vent in action—are indeed to be read by the formation and convolutions of the brain. The inquiry would certainly have a scientific value, and it might have a practical one also. If it were proved that the brains of criminals differed in a marked degree from those of the normal subjects which are found in our dissecting-rooms, it would be a strong argument in favour of those who hold that crime is only a form of lunacy, and should not meet with severe punishment, but rather with such merciful restraint as we give to lunatics. On the other hand, if it were shown that the criminal is a man of normal capacity, who has yielded of his own will to those impulses of hate and jealousy to which we are all subject, it would form a strong argument for the severer punishment of crime. Philosophical generalisation is the rule with both humanitarians and penalists, and the results of their philosophy are not altogether successful. A little pathological anatomy might help them to find a common basis of agreement, and redeem our penal code from the reproach of being at once vindictive and futile.

NEWS AND EVENTS OF THE WEEK.

THE Annual Ball in aid of the Funds of the Grantham Hospital was held at the Guildhall on Thursday, under the patronage of the Countess Brownlow, and the Annual Ball for the funds of the Victoria Nursing Association is to be held this (Friday), evening at the Guildhall.

THE P. and O. Company will in future devote the steamers of their branch service to the conveyance of one class of passengers only to Australia *via* the Cape, at low fares ranging from £16 to £25. For this purpose the present fleet is being remodelled, and the two 11,000-ton steamers—the *Bendigo* and *Ballarat*—now in course of construction, will be arranged on similar lines. Full particulars will be supplied by the Manager, 3 and 5 East India Avenue, E.C.

THE Secretary of State for India has sanctioned the construction of a medical college and hospital at Lucknow. The foundation stone was laid by the then Prince of Wales on his visit to Lucknow in December 1905, and the time since has been spent in elaborating and completing the full details of the project. The designs for the buildings are in the Indo-Saracenic style, the work of Colonel Sir Swinton Jacob, K.C.I.E. The college part of the scheme, the cost of which was met from private subscriptions, was commenced last year, and these buildings are now far advanced. The rest of the work will now be put in hand, and no effort spared to push the scheme to conclusion as rapidly as possible.

ACCORDING to the *Paris Médicale*, a gentleman of Stockholm has prosecuted the Danish Anatomical Institute in the following circumstances: Twenty years ago the prosecutor had contracted to will his body to the Institute on consideration of a monetary payment. Since then, however, he has prospered and become rich, and now wishes to break the contract made in his days of misery. The Danish magistrates nevertheless declare that the contract is a licit one, that it is valid at law, and that it is binding and incapable of being annulled. The tribunal has moreover condemned the prosecutor to pay damages to the Institute of Anatomy for having broken one of the clauses of the contract in having had two teeth removed without first obtaining permission from the Institute.

WE have received the reports for November 1910 of the Medical Officer of Health and of the Sanitary Inspector of the city of Aberdeen, according to which 323 births, 76 marriages, and 209 deaths occurred in the city during the month, giving rates per thousand respectively of 21.2, 5, and 13.7. Scarlet fever was the most prevalent zymotic, diphtheria came next, followed in order of prevalence by whooping cough and erysipelas. The numbers of cases respectively of these diseases were 51, 24, 18, and 16, and the deaths from each were 0, 2, 0, and 2. In addition, one case of typhoid fever, one case of puerperal fever, and one fatal case of cerebro-spinal meningitis were notified. Of non-notifiable zymotics, measles accounted for one case, phthisis caused 10 deaths, and other forms of tuberculosis 6 deaths. There were 3 fatal cases of influenza. The sanitary inspector made 493 inspections of food, resulting in 53 seizures of a total weight of 23,701 pounds. The health visitors made 56 visits to houses, finding 26 clean, 3 dirty, and 19 medium, and 8 improved on a second visit. Infant management accounted for visits to 222 infants newly born, of whom 193 were breast-fed.

DR. JAMES HALE, M.D., of Waterlake, Chiddingstone, Kent, who died on November 25 last, aged eighty-eight years, has left estate of the gross value of £20,080, with net personalty £12,207.

THE Philosophic Faculty of the University of Marburg has conferred the degree of Doctor Honoris Causa upon Mr. Ernst Leitz, of Wetzlar, the chief of the well-known firm of microscope manufacturers.

MR. GIDEON DE GORREQUER GRIFFITH, L.R.C.P., M.R.C.S., of 34 St. George's Square, Belgravia, S.W., who died on November 15 last, left estate of the gross value of £21,754 6s. 9d., of which the net personalty has been sworn at £21,596 13s. 1d.

DISPENSING BY MEDICAL PRACTITIONERS.—The Council of the Pharmaceutical Society has instructed Mr. W. S. Glyn-Jones, M.P., Parliamentary Secretary, to urge the Privy Council to authorise an investigation into the conditions under which the storage, compounding, and dispensing of medicines and their distribution are carried on in various surgeries, dispensaries, and similar establishments in Great Britain.

THE Council of the Pharmaceutical Society having considered the recent Blue-book on unqualified medical practice, has resolved to call the attention of the Privy Council to the fact that at present the precautionary measures imposed by statute upon chemists and druggists do not apply to medical practitioners. The Council further desires that the Privy Council should investigate the conditions under which the dispensing of medicines is carried on in various surgeries, dispensaries, and similar establishments in Great Britain.

DR. LABADIE-LAGRAVE, a French medical hero, has just been decorated at the age of sixty-six. He was a house-surgeon in 1867 and became a hospital physician in 1879, and is a distinguished gynaecologist. "He has taken," states the *Figaro*, with evident reflection on the tardiness of conferring the honour, "not less than thirty-nine years to pass from the grade of Chevalier of the Legion of Honour to that of officer. He had the red ribbon given him in 1871 for a deed in battle. In his book, 'The Invasion,' Ludovic Halévy has recounted how a young man took the lead at the risk of his life and saved an important convoy of ammunition and provisions from Prussian ambushes. The hero of that deed of arms is Dr. Labadie-Lagrange, chevalier of 1871 and officer of 1911."

A HOLIDAY IN THE CANARIES.—In these days of frost and sleet the vision of palm-trees, blue skies, and golden sunshine is to the average practitioner merely a vision, the enjoyment of which depends largely on his imaginative capacity. And yet a winter holiday in the Canaries is now within nearly everybody's reach, thanks largely to the splendid efforts of the Yeoward Line of steamers. For ten guineas the passenger by one of their boats obtains a twenty-three days' cruise, which, as we know from experience, can be one of the most enjoyable of ocean trips. Yeoward Brothers, whose address is 27 and 29 Stanley Street, Liverpool, issue a most attractive illustrated booklet giving full particulars about the trips. We shall be glad to know more about the new steamers, and to hear from medical men who have achieved the tour—and climbed the Peak!

Liv I Galton 625r

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From **DAILY NEWS,**
Bouverie Street, E.C.

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DRINK & HEREDITY.

Prof. Karl Pearson Taken to Task.

Professor Karl Pearson was severely criticised yesterday at a meeting of the Society for the Study of Inebriety in Chandos-street, W., when Dr. T. B. Hyslop discussed the influence of parental alcoholism on the physique and ability of offspring.

Alcoholism would appear, he said, to be responsible for a relatively greater number of births than would health or degeneracy without alcoholism, and there appeared to be some evidence derived from experiments on animals treated by alcohol that their young, although in greater number, were much weaker. Parental alcoholism accentuated the downward trend, and with each successive generation the period of exemption from alcoholism and degeneracy shortened, so that the offspring became alcoholic or degenerate at a relatively earlier age.

Professor Karl Pearson wrote that, to judge from the reports of their proceedings, the members of the Society did not seem to be occupied with scientific study of any kind. (Laughter.)

Sir Victor Horsley pointed out that the Galton Laboratory professed that the drunken workman was as good a wage-earner as the sober workman, and that his children were rather better, if anything, in physique and ability than those of the man who did not drink. Dr. Mary Sturge and himself had continued the examination of the Galton memoir, and they confirmed to the full the statement of Professor Marshall and Mr. Keynes that both the title and the matter of the memoir were absolutely misleading.

Dr. Sturge and he were publishing in the "British Medical Journal" a detailed criticism showing that Miss Elderton and Professor Pearson only arrived at their startling conclusions by disregarding facts. He also cast doubts on the accuracy of their statistical data. In consequence of their treating the facts in this manner they naturally arrived at the erroneous conclusion that drunkenness was no sociological evil to the individual or to his offspring.

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Sir J. Salter

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From

THE TIMES,
Printing House Square, E.C.

SIR VICTOR HORSLEY AND THE GALTON LABORATORY.

At a meeting yesterday afternoon of the Society for the Study of Inebriety, the PRESIDENT (Dr. Theo B. Hyslop, Resident Physician at Bethlem Royal Hospital) opened a discussion on "The influence of parental alcoholism on the physique and ability of offspring."

Dr. Hyslop declared his opinion that the problem was not to be solved satisfactorily by statistics. So far as the parental degeneracy and alcoholism were concerned, the Galton Laboratory researches had served the very useful purpose of bringing again into prominence the association—in contradistinction to causation—of alcoholism and degeneration, but it must be confessed that the question as to which came first—the mental defect or the alcoholism—had not received as much attention as was needed. As an asylum physician he was almost daily confronted with the difficulty of deciding which was cause and which was effect, and if, after full consideration of all the data available, it was well nigh impossible to decide such an apparently elementary point, how much more difficult it must be to find sufficiently reliable data on which to base statistics? Alcohol, as they all knew, would readily set alight and determine the existence of a neurosis or psychosis which might otherwise be on the "line"; and not only did it affect the individual and intensify his degeneracy, but it was also open to belief that it rendered the offspring more liable to suffer from the transmission of such degeneracy, not only in its parental intensity, but also to be manifested at an earlier age in the progeny.

SIR VICTOR HORSLEY said the Galton Laboratory professed that the drunken workman was as good a wage-earner as the sober workman, and that his children were rather better, if anything, in physique and ability than those of the man who did not drink. Dr. Mary Sturge and himself had continued the critical examination of the Galton Memoir begun by Professor Marshall and Mr. Keynes, and they had confirmed to the full the statement of those economists—namely, that both the title and the matter of the memoir were absolutely misleading. In fact, Dr. Sturge and he were publishing in Saturday's *British Medical Journal* a detailed criticism showing that Miss Elderton and Professor Karl Pearson only arrived at their startling conclusions by reason of their disregarding facts and precautions against error; further, that these authors had, in a manner unknown in the scientific history of this subject, published imaginary statistical data where in reality none existed.

f. 27+

W. J. Saltus

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LONDON.

[ONE PENNY.]

ALCOHOL AND HEREDITY.

SIR VICTOR HORSLEY'S CRITICISM.

A discussion on the influence of parental alcoholism on the physique and ability of offspring was opened by Dr. Theo. B. Hyslop last evening at a meeting of the Society for the Study of Inebriety.

Dr. Hyslop said the Galton Laboratory researches had served the very useful purpose of bringing into prominence the association of alcoholism and degeneration, but it must be confessed that the question as to which came first had not received such attention as it needed. Definite distinction, he insisted, should be made between parental alcoholism per se and parental degeneration plus a psychoneurotic tendency to alcoholism. "For a long time past," continued the speaker, "I have in many instances attributed mental and physical defects to parental alcoholism, but I must now confess that, after careful consideration of the data so much discussed by members of the Eugenics Laboratory I have endeavoured to discard my previous conceptions, and I have sought diligently for an instance of defect which I could honestly convince myself as being due solely and entirely to parental alcoholism. Now I feel that I cannot truly satisfy myself that in any one case there had not been also other factors than alcohol at work." His experience, he added, led him to the belief that parental alcoholism accentuated the downward trend, and with each successive generation the period of exemption from alcoholism and degeneracy was shortened, so that the offspring became alcoholic or degenerate at a relatively earlier age.

Sir Victor Horsley, in the ensuing discussion, said they were obliged to the president for pointing out that there were two points for consideration, namely, parental alcoholism per se and hereditary transmission of psychoneurosis. With the latter the Galton Laboratory had nothing to do. They professed that the drunken workman was as good a wage-earner as the sober workman, and that his children were rather better, if anything, in physique and ability than those of the man who did not drink. Dr. Mary Sturge and himself had continued the critical examination of the Galton memoir, begun by Professor Marshall and Mr. Keynes, and they confirmed to the full the statement of these economists, viz., that both the title and the matter of the memoir were absolutely misleading. In fact, Dr. Sturge and he were publishing a detailed criticism showing that Miss Ederton and Professor Pearson only arrived at their startling conclusions by reason of their disregarding fact and precaution against error. By their treatment of the facts, they naturally arrived at the erroneous conclusion that drunkenness was no sociological evil to the individual or to his offspring.

Canon Horsley, who for thirty years has worked in one of London's poor parishes, said that the children of alcoholic parents, it would be found, were, as a whole, under the standard required by the Army and Navy authorities. On the other hand, it would be found that children who had attained to the standard were children of sober parents.

P.T.O.

GALTON/2/13/14

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|------------------------------------|--------------------------|-----------|-----------------------|
| Eugenics & Politics | Inge | Lecture | Morning Leader |
| Hereditry & Social Reform | Elmer Sayer | " | M. Post Standard |
| Well-born & Ill-born | P. J. Reid | Letter | Masson Herald |
| To Kill the Unfit | Spender | Speech | North Eastern Gazette |
| Enemies of the Poor | C. H. Norman | Article | Daily News |
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| Education & the Sex Question | Leader & Eugenics | | Medical Press |
| Elimination of the Unfit | Article | | Lancet |
| Eugenics | P. S. Shaw | | Standard |
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| Eugenics & Divorce | ds. leader | | M. Post |
| The Rends of Albion | House meeting | S. S. S. | Referee |
| The Battle of Bait | | | P. M. J. |
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| Divorce Commission | Cracknell & Co. G. S. S. | | P. M. J. |
| Nietzsche & Falla | Max Minge | | D. T. |
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From THE MORNING LEADER,
Stonecutter Street, E.C.

8 MAR 1910

EUGENIC LOVE

SCIENCE THAT SWEETHEARTS SHOULD NOT SCORN.

Blushes and laughter from a bevy of girl students assembled in the lecture room of the Bedford College for Women yesterday afternoon greeted Prof. W. M. Inge's suggestion that a knowledge of eugenics would tend to prevent girls from falling in love with the wrong men.

Lecturing on the moral aspects of eugenics, the professor had been pointing out that a frequent objection with which he met was that the science constituted an undue interference with an individual's free choice in falling in love and marrying.

Eugenically Attracted.

"To a certain extent," said the professor, "I sympathise with that objection, but I do think a certificate of sound health should be one of the things insisted upon before marriage. The insurance policy is really more important than the marriage settlement. Some knowledge of eugenics," he added, "would in many cases prevent falling in love with the wrong people."

"Unconsciously, as it is, we are much guided by eugenic considerations." Generally, a man's attraction for a woman was attributable to his fine and strong physique; and in the same way, the points of beauty in women were those which belonged to her womanhood. But some training in eugenics would enable a young man or woman to detect those signs of degeneracy which are obvious to the scientific eye.

Duty of Beauty.

The professor boldly advanced it as the duty of every beautiful woman to marry. She owed it to the race. On the other hand, people should not be too scrupulous, because "physical health is not everything, and many families physically defective are yet of great use to the community."

Physical degeneration in this country is going on at an alarming rate, Prof. Inge believes. He went so far as to say that if the process continued at its present rate, in three more generations the English stock, which a few years ago was one of the best in the world, would be one of the poorest. In all his travels he had never seen poorer specimens of humanity than those in the English slums; and it had become a serious problem that the more civilised the State, the more the population was increased from the most undesirable stocks.

"The strong social sympathy which refuses to allow the weaker members of the community to perish seems to be increasing the evils we want to cure."

Not a Police Matter.

The professor repudiated Mr. G. K. Chesterton's dictum—"Eugenics proposed that people should be forcibly married to each other by the police"; and he dissociated himself entirely from Mr. G. B. Shaw's recent sociological flippancies with regard to the marriage tie.

"Marriage, as we have it now," he declared, "is the best thing in human life, and I deplore the levity with which popular writers of to-day introduce into their works violations of the marriage tie."

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From **MORNING POST,**
346, Strand, W.C.

- 8 MAR 1910

EUGENICS AND ETHICS.

A lecture on Eugenics and Ethics was delivered at the Bedford College for Women last evening by Professor W. R. Inge. There was a large attendance of women students. Dr. Inge stated that this was the first invitation the Eugenics Education Society had received to provide lectures outside and it was appropriate that it should have been given by the Bedford College, for eugenics was quite as much a woman's as a man's question, and ought, therefore, to be discussed by women. They of the Eugenic Society all believed that marriage was sacred and would have nothing to say for any proposals for abolishing or tampering with that institution. Nor did they want to kill anybody. (Laughter.) As for Mr. Chesterton's remark that eugenics proposes that people shall be forcibly married to each other by the police, that was the sort of misrepresentation that all new movements had to expect. Only by the methods of the cattle-breeder could the collectivism which Mr. Bernard Shaw preached be a success. It was not practical politics to ignore the time-honoured sanctions of morality and civilisation. These had not come from the clouds, but were the product of racial experience and of the racial conscience. Marriage was the best thing in human life, and he deplored the levity with which many popular writers treated the subject and the way in which they introduced the violation of the marriage law into their essays. In some respects, however, they were alarmists. In nature, wherever slackness was tolerated, wherever competition was relaxed, disadvantageous abnormalities always tended to appear and establish themselves. Man, as compared with almost all other animals, was a very slowly increasing creature with an abnormally low death rate. Medical science and sanitation had done a great deal to lower the death rate. A vast number of Englishmen who in former times would have perished had been kept alive.

CIVILISATION AND THE BIRTH RATE.

The birth rate had declined from 36 in 1878 to 26 last year. This was due in part to morality, in part to prudence, which operated in deferring marriage, and in restraining the size of families, and it was possible there had been a slight decline in fertility owing to luxurious habits. As civilisation advanced both death rate and birth rate decreased. While the death rate was eugenic the birth rate was not, for the greatest decline occurred in the best parts of the population. Degenerates were the most prolific. The test of the prosperity of a country was not the amount of exports or imports, not the power of its Army or Navy, not the diffusion or amount of its wealth, not the efficiency of its education, but the kind of men and women it turned out. Speaking of positive duties, he said every man or woman who had reason to think that he or she was exceptionally well endowed either in body or mind or character ought to think it a duty to marry and have children. We ought not to view with favour vows of celibacy or virginity by persons who might bring into the world exceptionally strong, healthy, and good citizens. With regard to the negative side, there were certain conditions, such as insanity, epilepsy, deaf-muteness which should probably prevent marriage, but they ought not to be too scrupulous on some of these points, because physical health was not everything and there were a great many families with some physical defect, who, nevertheless, were in many ways most useful to the community. It would be undesirable for highly-conscientious people to inquire too closely whether they had some weak spot in their constitution and abstain from marriage on that account. A certain amount of sound health, however, ought to be insisted upon. An insurance policy was more important than a marriage settlement. Christianity had always been a religion of personal perfection. It had always worked for the improvement of the individual. It had always strongly condemned parasitism. It preached mutual help, and it treated "worldliness," which was obviously anti-eugenic, very severely. Luxury, again, which was responsible for deliberate restriction, was alike anti-Christian and anti-eugenic, and Christianity condemned war, which was thoroughly anti-eugenic because it killed some of the very best men of the race before they had become fathers. The South African War had done great harm to the physique of the race by the loss of 25,000 picked young men. If we continued as we were going on for three more generations the English stock, which a hundred years ago was one of the best in the world, would be one of the poorest. It was not easy to find a complete solution, but they could all make rules for themselves.

Mr F Galton f.5r

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From **GLASGOW HERALD,**
65-69, Buchanan Street, GLASGOW.

[REDACTED]

HEREDITY AND SOCIAL REFORM.

Dr Ettie Sayer, of the Eugenics Education Society, London, delivered a lecture on "Heredity and Social Reform" under the auspices of the Glasgow Health Culture Society in the High School Hall, Holland Street, last night—the Rev. David Graham presiding. After referring to the progress which had been made in connection with the study of the principles of heredity during recent years, Dr Sayer dealt with the subject in relation to disease and intemperance. She was of opinion that the unfit ought to be segregated into colonies, where, as had already been demonstrated, they could live happy and useful lives, but at the same time they should be prevented from reproducing their kind. In this way the feeble-minded would be exterminated in two generations. Dr Sayer concluded by a reference to positive eugenics. During the lecture a number of statistical charts were exhibited.

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Rev. F. E. Galt 46r

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From

Mr. Easton D

20/12

Gay

THE WELL-BORN v. THE ILL-BORN

EDITOR, "NORTH-EASTERN DAILY GAZETTE."

Sir,—If the Eugenics Society had authorised the publication of the "conclusions" of the small investigation committee, Dr. Ewart might have been justified in arguing that those conclusions were the "principles" of the Eugenic Society. But the Eugenics Society (see page 161 of the "Review") accepts no responsibility whatever for these conclusions, and therefore Dr. Ewart's argument fails.

The small committee's conclusions represent the opinions of its members—some spinsters and others, as to the scientific qualifications of whom Dr. Ewart may be interested to inquire at his leisure.

My letter was a criticism of the "conclusions" and of Dr. Ewart for taking them, thus unauthenticated, as the text of his address. No supporter of the Minority Report would adversely criticise true eugenic principles, because the Minority Report is drawn on strictly eugenic lines, and besides, there is a national need for well-born children.

First of all, the Minority Report proposes to reform the Poor Law, which, as it is now administered, subsidises the reproduction of inferior types of human beings, especially the birth of offspring by those whom Mr Francis Gallon describes as "the most dangerous class of all"—namely, the feeble-minded women who use the workhouse as a free maternity hospital.

The Minority Report cannot, as Mr Webb has shown, solve the central problem of eugenics, accepting the statement of it by Prof. Karl Pearson—i.e., to make the well-born child a valuable economic asset; but its proposals, if carried out, would remove some of the obstacles to the fuller acceptance of the responsibility of parentage by the healthy and vigorous members of the community, and in several ways it would discourage or prevent the multiplication of the unfit.

Prof. Karl Pearson's name does not appear anywhere in the report of the Eugenics Society's small committee, and, indeed, it would be impossible for him to accept responsibility for anything so unscientific as that document. Neither Dr. Ewart nor the committee define what is meant by "inherent civic defects," and in the absence of a definition they cannot prove whether or not the "defects" are hereditary or anything else. The more closely the committee's report is studied the more inconclusive it is seen to be.

Dr. Ewart refers—in one of the last three paragraphs of the report of his address—to sickness as a hereditary cause of pauperism. If he will trace up and down the lives and adventures of the man, marked D16 on the chart which accompanies the report, and his family (see key to chart pages 187 and 199), he will find himself forced to the conclusion that D16 became a pauper because his father died of bronchitis, which may or may not have been chronic, and was possibly contracted after D16 had been born. Here, as elsewhere, the report asserts that pauperism is due to "inherent civic defects," and gives pauperism as the proof!

Dr. Ewart will also discover (page 187) as a surprising "civic defect" in paupers, that they tend to marry into other pauper families. Do no other classes in society tend to marry their equals? How many of us escape from this "civic defect"?

I am, sir, etc.,

P. J. REID

Enemies of the Poor.

THE world is approaching a strange conflict—the struggle for supremacy between scientific efficiency and human inefficiency. One prophet of inefficiency and humanity is Mr. G. K. Chesterton. The prophets of efficiency and inhumanity are the vast body of the governing and professional classes. The mechanism of scientific apparatus is being rapidly substituted for the natural processes of human effort. Under the cloak of scientific utility the democracy is being hemmed in with every kind of regulated device. The vivisectionist, under the pretence of curing the world of its bodily ills, has established the principle of operating upon a low form of life to preserve a higher form of life. Some eugenists have carried the same theory the step further of urging that unfit parents should be forbidden to procreate children. Society is steadily being swung round to the point from which civilised mankind started. The vivisectionist and the eugenist will soon be preaching the slaughter and consumption of human life for the nobler advantage of humanity.

This may seem a grave exaggeration; but, after all, those who defend cruelties on the ground of the higher good must meet the logic of their case. Everyone would grant that operations performed upon rabbits, cats, and dogs in the name of science would be the height of cruelty were they practised for private amusement. That will be accepted by all reasonable persons. Equally, though perhaps more disputably, most people would agree that the prevention of propagation by unfit persons, remembering the only way by which such prevention could be legally or morally enforced, would be a social wrong unless unquestionable public good could be shown to flow therefrom. To disable the unfit from procreating, by means of personal segregation or physical operation, for reasons of private malice or spite would be unthinkable.

There remains to be considered what the Romans called the public good as the one valid reason for the legalisation of what would be regarded as private enormities. Is there any limit to which the logic of this proposition can be confined? Assuming the scientists and medical men who are seeking the cure for cancer discovered (perhaps quite truly) that cancer could be stamped out were they allowed to inject human blood into the diseased frame of the cancerous patient, would the vivisectionist then claim the right to drain criminals who were to receive the death penalty of their blood—always for the public welfare? If the reply is yes (and there is the instance of the Philippine prisoners of war), the logic of this demand can easily be pressed further. Supposing the injection of human blood set up some unknown irritant, but the drinking of human blood did not, would the scientific physician recommend his patient to quaff draughts of blood? Certainly he would. Thus society, in the name of civilisation and the public good, would be encouraged by its scientific guides to acquire the unquenchable thirst of cannibalism! Those who may urge that the drinking of blood and the consumption of flesh are different in degree should reflect upon Shylock's dilemma when he claimed his pound of flesh under a bond which contained no clause about blood.

The eugenist seemingly stands in a humaner position. His plausibility is more deceiving, but the rays of logic soon lighten the dark places of his reasoning. The doctrine of eugenics has divers interpretations. That there is any exact definition accepted by every eugenist is doubtful. To avoid confusion, let me define eugenics as the improving of the stock by the weeding out of the unfit. To this definition let me add a method—by means of preventing the unfit being in a position to transmit their unfitness. My definition, rightly or wrongly, runs thus: Eugenics represents improvement of the stock by the weeding out of the unfit; that is, by preventing the unfit from transmitting their unfitness to future generations.

How is that to be avoided? Some people glibly

advocate that one section of the unfit, known as "the unemployable," should be cast into a lethal chamber. Other more careful thinkers suggest that idiotic, epileptic, consumptive, or insane adults should be forbidden by law to have children, or that their children should be destroyed. The slightest analysis of what underlies the theory of eugenics soon brings the inquirer into a realm of thought where the destruction of human life can be deliberately recommended on utilitarian grounds. The maze of the eugenist morality is more easily unravelled than the tricky fallacy of the vivisectionist. The eugenist is sooner faced with his invasion upon human and social rights than the vivisectionist, who protests, with an absurd solemnity, the superiority of a human being over a rabbit!

Is the statement that "the vivisectionist and eugenist will soon be teaching the slaughter and consumption of human life for the nobler advantage of humanity" so grave an exaggeration? Vivisection and eugenics are, too, most sinister infringements upon those social rights of mankind which are the only possessions of the poor. This steady sapping away at the roots of society, for the abolition of cannibalism and preservation of their children are the principal benefits the common people have gained from civilisation, may cause that rebarbarisation of society which has been prophesied by some acute observers. The bureaucrat may put the unemployable in a lethal chamber, but he will put civilisation in the same lethal chamber. The eugenist may slaughter in public abattoirs the unauthorised children of licentious, consumptive, or lunatic parents; but he will check the intellectual progress of civilisation for ever. The vivisectionist may swamp the bacillus of cancer and other diseases in doses of purified blood; but he will engulf civilisation in oceans of blood.

The basic principle of "the public advantage and welfare," upon which vivisection and eugenics are founded, is, by the natural sequence of demonstration, swept away. It is the scarlet sin of the end justifying the means in a newer and more attractive raiment. The end, in fact, never does justify an evil means. Should the means be evil, the end must be evil. The end, on the hypothesis, was to cure cancer. The means—admittedly an evil one—was the drinking of human blood, resulting in an evil more terrible than the end which was to be justified by that means. These clever pretensions of scientific men are generally the crudest fallacies; but, worse than crude, they are also the cruellest in their consequences.

A pleasanter example of this delicate examination can be found in Nostradamus; but the topic is the ever popular one of marriage and love. The scientific reactionaries' most astounding imposition on the poor was the institution of marriage. Aristocracies have never been affected by marriage, while the middle classes were touched as much or as little as they pleased. Marriage was supposed to be a moral institution for the welfare of society. The Countess of Champagne, in presiding over a Court of Love in the twelfth century, treated this theory with scant ceremony, in deciding the question, "Can true love exist between man and wife?" In a beautiful garden, surrounded by her ladies, on a May afternoon in the year 1174, the Countess pronounced this judgment:—

We declare that, in the opinion of all the ladies here present, love cannot extend its privileges to husband and wife. Lovers grant each other everything of their own free will, and are not in any way constrained by feelings of necessity, while it is the duty of husband and wife to submit their wills one to the other, and never to refuse each other anything.

Can anyone challenge the truth of this ruling? Those scientific rogues who established matrimony would have killed love, except that the aristocracies of the world treated marriage as a mere social convenience. But the institution of marriage killed the ennobling and intellectual influence of love among the poor classes, and turned the relations between the sexes into mere sexual gratification. It was a most ingenious and well-planned attempt to keep down the poor by robbing them of the noblest civilising influence in the world.

C. H. NORMAN.

the face of the clock. It still fills my heart with sadness; but it is a sadness that does not kill joy; only soothes it to rest. I am now able to appreciate in all its fulness the beauty of an hour that belongs neither to light nor to darkness, an hour that hovers reasonably, wisely, irresolutely between extremes.

Emphasis in locomotion is another of my favourite abominations. Of all hateful things none is more hateful to me than hurry. I never travel express. I prefer a more ample, dignified, Trollopean style of locomotion. When I decide to go upon a journey I carefully choose the slowest train and the longest route; for, as an experienced young lady of my acquaintance once remarked, "It is not the getting there, you know, that really matters, but the going." Besides, in so travelling, I find that the anticipation is more lasting and the disillusion not less certain. Therefore, why run?

Once settled in my carriage, I lie back in my seat at a comfortable angle—as obtuse as human anatomy and railway economy will permit—and gaze through the windows at the passing clouds, trees, and telegraph posts, reflecting deeply upon what has gone before, speculating lazily upon what is to come next, counting up the fulfilment of hopes that are past, and stoically preparing myself for fresh disappointments.

From all this it will become clear that I am a philosophical rather than a commercial traveller; and my favourite mode of locomotion might perhaps not inaptly be compared to that of a highly sophisticated, slightly tired, contemplative cow, ruminating at leisure over the boundless pastures of creation. Indeed, were I entirely free to choose my own vehicle, I would never travel except on donkey-back. That, I understand, is the form of peregrination best suited to philosophical meditation, and on that account is generally favoured by the wise men of the East. But here in England donkeys, though not unknown, are never used for riding purposes. Therefore, the sight of an Oxbridge don moving down Piccadilly astride an ass might appear somewhat original; and to avoid the imputation of originality has always been one of the principal aims of my life. I shun conspicuousness as diligently as other men court it. The thing is not so easy as it may seem.

Inconspicuousness does not consist simply in not being prominent. A deep ravine is quite as conspicuous as a lofty peak. Some people, of course, are born inconspicuous, just as some people are born princes, poets, or cooks. Upon others inconspicuousness is conferred by a sort of tacit plebiscite on the part of their discerning fellow-citizens. A few achieve obscurity by their own unaided efforts. It is not, naturally, for me to say whether I am one of these self-made nonentities. I well know that people like to see talent tempered by modesty. I think, however, that I may, without doing violence to any of the recognised laws of decorum and good breeding, describe some of my efforts towards the attainment of undistinction.

In dress I affect the neutral grey or the non-committal brown, and in debate I love to listen gravely to both sides of a question, and to take the one which is approved by the majority. But even then I always qualify my assent with that blessed word "perhaps." For although I may have opinions, I never allow them to degenerate into convictions.

"I would thou wert either cold or hot," said to me my friend Shav one day.

"I am quite content to remain tepid," I replied, with my habitual complacency.

"Have you no principles?"

"I have a few; but I rather distrust them. I am practical. I cannot measure an action until it is actually done. And when it is done I like to look at the profit and loss resulting therefrom before I pronounce upon its morality."

"You are, and will always be, one of the semi-colours of life—a piece of conventional mediocrity with a blameless record, a spotless collar, a prosperous banking account, and a stiff outlook," he informed me kindly.

I smiled, for I saw at a glance that this portrait of myself, like all the portraits drawn by my gifted friend, was a grotesque, extravagant, and wholly misleading caricature.

"What if my record is blameless, my banking account prosperous, and my collar spotless?" I demanded. "Cannot a fellow be respectable if he is so minded?"

"Respectable!" he cried, with quite unnecessary warmth. "What, in the Devil's name, is the use of Respectability if thou inwardly art the pitifullest of all men?"

"My dear Shav," I said, "you are, as usual, exaggerating. I do not think I am the pitifullest of all men. As to the use of Respectability, it is exactly the same as the use of ancestors—it enables those who have some to look down upon those who have none. But the question of utility is really quite irrelevant. The truly respectable man does no more think of the use of his respectability than the truly healthy man thinks of the use of his stomach."

"But you are not a healthy man. You are only a wobbler!"

"You are at liberty to call me a wobbler, a trimmer, a time-server, a Laodicean, a fashionable preacher, or a member of Parliament if you choose to be rude and uncharitable. I would call myself an English gentleman and scholar. I have a sense of proportion and a healthy horror of superlatives—that is all."

"But don't you believe in anything?"

"Oh, yes. I believe in the golden mean. It is, on the whole, the safest thing to believe in. As the Poet has said:

He that holds fast the golden mean,
And lives contentedly between
The little and the great,
Feels not the wants that pinch the poor,
Nor plagues that haunt the rich man's door,
Embitt'ring all his state.

"I see. Your Golden Mean, I take it, is another name for what used to be called the Golden Calf," said jesting Shav; and would not stay for an answer.

It was perhaps as well, for I had no answer ready. I am not built on Shav's lines. I have neither his treacherous tongue nor his bad manners. What in him arouses indignation, in me arouses either nothing at all or only amusement. And where he hates mediocrity because it is mediocre I like it because it is, so often, comfortable. Why should I not? I have no valid reason to suppose that I was brought into this world with a divine commission to make myself disagreeable to my neighbours. I have no desire to pose as "a devil of a fellow, dancing gaily and supermannishly over all the established moralities." Such a performance may be tolerated, even applauded, in a man of genius. But it would come with an exceedingly ill grace from a don.

I do not belong to the species of the rhapsodists, the reformers, the saints, the seers—men who pretend to reveal to the world a new light, a light kindled by the intensity of their own emotions and generally repaid by the flames kindled through the just resentment of the world. In common with the rest of my Oxbridge colleagues, I am a priest of Respectability, not a dancing dervish, or "shaker of things." Whether this is the best of all possible worlds or not is a question which I cheerfully leave to those who can boast a wider acquaintance with worlds. My own experience is confined to this planet; and, on the whole, I confess that I have found this planet as good a planet as might be expected. No lawless dithyrambs, no audacious, subversive speculations in philosophy, finance, or faith shall ever receive any countenance from me. Let others affect martyrdom; for myself, I am unworthy of the honour.

Were it not too presumptuous, I would say that my attitude towards life and its affairs is the attitude of an aristocratic legislative assembly—like the Sanhedrin or the House of Lords. I am no belted earl, nor a baron, nor any brahman; yet by disposition and education, if not by birth, I am a noble statesman,

And noble statesmen do not itch
To interfere with matters which

are better left alone.

be generally recognized and at least to some extent taken advantage of, can hardly be doubted. Whether the time is quite ripe for this is less certain.

In our desire to improve the human race by *artificial* selection we must be careful not to minimize the part which *natural* selection is playing in moulding man's destiny. What is largely lost sight of by modern eugenists is the important fact that natural selection is still actively at work on man, not in one direction only, but in all the directions indicated. It is strange that even such eminent biologists as Ray Lankester and Arthur Thomson have fallen into the error of supposing that this beneficent process has entirely, or almost entirely, ceased to operate in the case of civilized man.

Nothing could be further from the truth. Natural selection is essentially bound up with the very existence of life as we know it in this world of ours, for only by its means can species become adapted to, and maintain their adaptations to, the ever changing conditions. Had I the time I should have no difficulty in showing that natural selection is actively at work on man, eliminating the ugly, the immoral, as well as the physically and intellectually unfit; and that by the operation of entirely natural processes the human race is ever tending to increase in beauty, in virtue, and in intelligence, as well as to maintain its standard of physical fitness. It is the desirability of maintaining this standard which is chiefly occupying the attention of the eugenist. He is haunted with the dread that civilized man is undergoing a progressive racial deterioration. Yet, far from this being the case, he is, in actual fact, much more physically fit as regards the conditions imposed by neo-civilization than he has ever been before.

As I pointed out more than twenty years ago in my "Causation of Disease," every non-accidental death occurring before the end of reproductive life falls under the law of natural selection; and the greater the number of such deaths, the more stringent is the selective process, and the harder the surviving race. This truth must ever be borne in mind in considering the high birth- and death-rate of the urban poor. Racially the poor are (in my opinion at least) inferior mentally and, to some extent, physically to the well-to-do; and hence if the former propagate more rapidly than the latter this may be detrimental to the race at large. On the other hand, it must be remembered that, by so much as the death-rate of the one is greater than that of the other, by so much is the elimination of defective types greater in the one than in the other. Very much more is done to preserve defective physical types in the case of the well-to-do than in the case of the poor.

While, then, I am willing to admit that the time is near at hand, if it has not already arrived, when an attempt should be made—chiefly by educating public opinion and creating new ideals—very cautiously to supplement (not *substitute* be it noticed) natural by artificial selection, I have no fear for natural selection and of its power to lift man upward. That inexorable process is very well capable of taking care of itself. Upon it we must place our chief reliance, not only to maintain our present efficiency, but to advance us in the future, as it has advanced us in the past. Its operation is far less hindered than we are apt to think. Here and there perhaps we may be temporarily checking its sway, but so long as life lasts on this earth, it will in its own tragic way continue to carry on its beneficent work of racial adaptation; and we may rest assured this natural selection will be performed with infinitely greater wisdom than any selection which the wisest of men can make.

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From J. LIONEL TAYLER, M.R.C.S., L.R.C.P.

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WHAT I personally feel to be the one safe method of inquiry into problems of eugenics and child welfare is that which studies structure and function side by side. This method has been practised by medical men and physiologists for the last hundred or more years, and there must be much danger in investigating the psychological aspect apart from the structural, morphological one, or *vice versa*.

No one will question the advance which has been made in the knowledge of disease as a result of the increased study of *post-mortem* evidence; nor the benefit which has followed from the surgical observation of disease, the result of the advances in operative surgery. And, in like manner, our most valuable and certain conclusions on states of feeble-mindedness and idiocy have been obtained by noting that certain bodily characteristics are associated with certain mental ones (as, for instance, oblique eyes and mongoloid imbecility). In eugenics surely no other means of study can be regarded as satisfactory, for methods not based upon the observed relation of structure and function are necessarily far too speculative to be safe.

Take as an example such a simple question as that of precocity in

growth. D. Kidd¹ and others, in reference to savage childhood, find that primitive children develop early, mentally and physically; the same fact is certainly observable in many slum types of our large towns, who are very early able to fend for themselves in a manner that is often surprising. The fact also that, in the higher mammalia, the more intelligent forms of life have longer periods of infancy also points to the conclusion that precocity is an undesirable feature in a child; yet it is not less certain that many normal geniuses have been extremely precocious, while others are slow in developing. In music, for instance, these two groups are noticeably prominent. And as artistic and literary genius is on the whole more precocious than scientific, we may be, and probably are, dealing with another kind of precocity, and one that is possibly highly desirable for the race.² Again, there are some boys and girls who attain their full stature and mental equipment some four or five years earlier than others, who are yet neither precocious in the primitive sense, nor have they any observable qualities of genius, and the rapid growth is often not traceable to abundance of food or exceptional hygiene. Yet, again, precocity is certainly associated in some instances with warm climates and also luxurious habits, and less rapid development with colder and more severe surroundings. Finally, it is probable, as statistics in regard to overcrowding reveal, that bad air, poor food, and injurious pre-natal and post-natal conditions of child life all tend to retard growth. But until we begin to patiently unravel the different forms of precocity by studying the different types of children to be found under different conditions, we shall be in serious danger of confusing good and bad types together, or of calling some defect hereditary when it is hygienic or climatic.

In like manner, the tables of heights and weights at different ages for different individuals are useless to the observant medical man, who knows that height and weight factors are type and racial as well as hygienic signs, and harmful to the unobservant, as reliance is placed on unscientific data.

Or to take another point of view, almost all co-education statistics are vitiated because no attempt has been made to separate into groups the different states of masculinism and femininism in order to discover what effect co-education has upon the *biologically* feminine type of girl and the *biologically* masculine type of boy.

Most of us feel to-day that much is wrong with our life-conditions: defective eyes and teeth; nervousness; an apparent increase in insanity

¹ KIDD, D.: "Savage Childhood."

² The alleged hereditary instability of certain types of genius is, of course, a further difficulty to be considered.

and non-bacterial diseases—all alike point to constitutional enfeeblement, as do also the inability of some mothers to nurse their own children, and the loss of parental desire in adults of both sexes, which seems to be increasing everywhere to-day. Is enfeeblement hereditary, or is it environmental, or is it due to a change in type which demands different social surroundings to live healthily?

Nothing but careful *continued observations of the physical and mental characteristics of individual children*, recorded by the co-operation of teacher, school medical officer, general practitioner, and parent, will, I believe, finally reveal to us the exact causes (eugenic and hygienic) of the ill-health in our midst.

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By MRS. A. C. GOTTO.

Hon. Secretary of the Eugenics Education Society.

FROM the standpoint of the eugenicist, the welfare of the child is necessarily dependent on its eugenic quality; the greatest asset it can have being parents representing sound stock. No amount of attention given to the environment, home life, nourishment, education, &c., can be of much avail unless the inherent quality of the child is such that it can respond. It must not be thought from this that the effect of environment is under-rated by the eugenicist. A child is like an undeveloped photographic plate (the limitations of the figure are obvious); the result of development is a good or bad rendering of the picture already imprinted on it, but the picture itself remains the same, and no amount of variation of the process of development will make a photograph of a ship into one of a landscape. So with the child, innate characters correspond with the picture; educative methods may be used in developing them, but in the end they manifest themselves only as various means for developing inherent characters, which may be neglected or assisted by different methods, but the potentiality of which remains unchanged. The biological factor is, then, of primary importance in child welfare. Once this is universally recognized, much of our present social work will be reformed. Of what use, under such circumstances, are the efforts to develop along *mental* lines mentally defective children? The money now spent on such methods in special schools—where, by the way, more is lavished on abortive attempts to educate those who are uneducable than is spent on the fit child, who would profit by instruction—would be diverted to more useful channels.

The Waverley Institution of America has amply proved the effectiveness of simple manual work for the feeble-minded. Instead of attempting to instruct the children in reading, writing and arithmetical, it recognizes the futility of such a proceeding, and directs its attention to varieties of manual industries, such as washing, weaving, gardening, &c., with the result that the institution is nearly self-supporting. The present movement urging the permanent care of the feeble-minded will make such things generally known. It is among the general population that there is such crying need for the recognition of personal responsibility towards the race. If it were more clearly recognized that in the choice of a partner the actual type and quality of future offspring are decided, and that all subsequent provisions are as trifles compared with that choice, there would surely be fewer hasty and selfish marriages. The greatest tragedy in life is the helpless hopelessness of the mother of suffering and degenerate children.

At least the next generation can have a better chance, and in turn can give it; they can profit by our mistakes. The wise parent will instil the eugenic ideal, in many conscious and unconscious ways, into the minds of his children. The importance and privilege of parenthood will be put before them, and their ideas of beauty will be made to include health and fitness. If the right ideals have been put before the child and adolescent, when the time for marriage comes the subconscious judgment of the individual will have been so formed that he or she will be attracted to the eugenic type, and unfit or anti-eugenic type will be rejected. It will be realized that fitness, mental, moral, and physical, are of more true worth to children than any economic provision it is possible to make for them.

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From THOMAS CLAYE SHAW, B.A., M.D., F.R.C.P.

Emeritus Lecturer on Psychological Medicine, St. Bartholomew's Hospital; late President of the Society for the Study of Inebriety; Author of "Ex Cathedra Essays on Insanity," &c.

AMONG the many directions in which one tries to foresee the traps and pitfalls into which the young are apt to drop, there are two which stand out pre-eminently, and to these children are exposed at an early age—the sexual impulse and the alcoholic example and education. It seems almost a pity that the sexual proclivities arise so early—a pity, that is, from the point of view that functions which are intended to be exercised so much later on in the career of the young person should be

nascent at so early a state, when premature cultivation may be fraught with very disastrous consequences. Of course, one recognizes that the development of the sexual life is intimately connected with the perfection of mental integrity, and it may well be that the gradual entry into consciousness of the latent sexual elements should proceed *pari passu* with the gradual expansion of those other mental states of which they form so essential a part; but it cannot be too strongly urged that undue and premature cultivation of the sexual proclivities should be fended off with the greatest rigour. In the practical study of insanity nothing is so forced upon our attention as the great part played by excesses in the direction indicated, and by the self-incrimination frequently displayed by those who have exploited these functions before the time was ripe for their correct physiological exhibition. The practice among the Jews of early circumcision must be strongly commended as tending to lessen early irritation, and especial attention should be given to the prevention of masturbation, set up, as it so often is, by the bad example of other boys. Hence, supervision of the early life of the child, especially at school, is one of the most exigent duties of the schoolmaster. How far it is necessary or advisable to lecture boys on this subject, except in the case of those caught *flagrante delicto*, is a debatable point. Whether it is judicious to arouse into flame these smouldering promptings by direct allusion to them is a matter on which people differ; but there can be no difficulty in agreeing that bad environment, the reading of amatory novels, and all that is calculated to give prominence to a very delicately balanced part of the organism, should be most stringently guarded against.

The case of alcohol, too, is very urgent. One sees with misgivings the practice of taking young children into hotels and table-d'hôte dinners, accompanied with even the giving of stimulants. Such practices should be condemned absolutely; children should never be brought up to take alcohol as a regular accompaniment to food, nor is it even advisable that they should be brought into familiarity with the use of it. To train a young person to be able to "stand his liquor" is a crime, and, though it is not advisable to practise deceit before children by drinking only water at meals and taking stimulants "on the quiet," it should always be remembered that children are great at copying and at noting the habits of their seniors, and that moderation and abstinence are the "complexes" which should be at the base of the mental organism of the young, for on these alone can a healthy superstructure be erected.

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THE CHILD

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From C. W. SALEEBY, M.D., F.R.S.E., F.Z.S.

Author of "Parenthood and Race Culture: An Outline of Eugenics."

By eugenics I understand the application to mankind of the Darwinian, which is the natural, principle of selection for parenthood. Under the automatic *régime* this selection proceeds by death—*i.e.*, by rejection for life. Such selection is necessarily always occurring amongst ourselves. But eugenics is selection for parenthood, not selection for life. No form of killing or permission of killing is eugenics. The eugenic opportunity ended when the new individual came into being, at the moment of conception.

It follows that the production of abortion, the destruction of the unfit, the permission of infant mortality, are none of them eugenics and do it nothing but injury. As regards infant mortality we now have exhaustive proof that, as I have always maintained, it is not eugenic in any sense, merely slaying many and injuring many more. All individuals must be held sacred and our ideal must be to provide the best environment for each of them.

Many students of heredity, and notably Professor Karl Pearson, though in this respect, at any rate, he is in agreement with some of the minor Mendelians, are now teaching that "nature" is everything and "nurture" practically nothing in determining the characters and destiny of living things. Hence most of our work for the child is condemned as futile or worse. These are the opinions of students who have lost all sense of proportion because their work is entirely confined to calculating and counting in territory—notably psychological—where they are not at home. Eugenics and childhood are alike injured by these exaggerations. The truth is that the characters of living beings are not, as our naïve mathematicians suppose, the *sum* of "nature" and "nurture," but their *product*, and to ignore either is to make a fatal error. All but eugenists ignore "nature"; and eugenists must recant the foolish error of retaliating by ignoring "nurture." Eugenist and educationist must work together for their supreme end. Above all does this apply to what I have called "Preventive eugenics, which stands between healthy stocks and the *racial poisons*, as they are best named—alcohol, the worst enemy of childhood alike in the natural and the nurtural factor, lead, venereal disease, and malaria."

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London, N.W.

THE CHILD

From CHARLES WALKER, M.Sc.

Director of Research in the Glasgow Cancer Hospital; Author of "Hereditary Characters."

It is necessary to discriminate definitely between what is good for the race and what is good for the individual. What is beneficial in a high degree may be injurious to the race; therefore, organized efforts to benefit children should be in directions which will not lower the racial standard of any character that is of obvious value. The action of natural selection upon inborn variations occurring among the individuals forming a slum population will, according to the time during which the selection acts, produce a race which is more or less slum immune. If the slum environment can be permanently removed, slum immunity ceases to be of value to the race; therefore, as the total removal of slums appears to be feasible, efforts in this direction are wise. Here the individual is benefited and no harm done to the race. The campaign against tubercle is of doubtful value. The risk of infection as regards the individual is lessened, and so those who have varied from the racial mean of immunity survive longer and have more chance of producing children who may vary towards still less immunity. When we consider the ravages of the tubercle bacillus upon its introduction among races that have not, as we have, undergone a stringent selection with regard to it, and also consider the fact that *every* individual in England must be frequently infected, it becomes evident that we, as a race, have reached a high degree of immunity. The campaign benefits the individual who has varied towards less immunity, but the ultimate result must be the lowering of the racial standard. It is almost impossible to imagine that this bacillus can ever be completely extirpated; it is too widespread and resistant. These two examples, taken from hundreds, show that a mistaken altruistic sentiment is as likely as not to injure the race in benefiting the individual.

7, Dundonald Road,
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Newspaper cuttings
Review

University of London, University College, W.C.

The Francis Galton Laboratory
for National Eugenics.

GALTON BEQUEST.

April, 1911.



Newspaper-Reviews.

Finger Prints & Congress of Hygiene

the scheme. He points out that this would shut out the sons of many parents far from well off, who by the scholarships are enabled to obtain the education of St. Paul's and attain a much higher position in life than their fathers (for instance, the Godolphin School at Hammersmith and the Mercers' School, from both of which St. Paul's draws recruits, would be excluded); and also that the boys at the Board schools ought to be drafted into some other secondary school before coming to St. Paul's. The transition would be too violent, and they would have to be taught separately if they came direct.

THE Parliamentary Papers this week include Returns of Alien Immigration, November (1d.); and Report of the Director of the National Gallery, Ireland, for 1891 (1d.).

SCIENCE

Finger Prints. By Francis Galton, F.R.S. (Macmillan & Co.)

THE infinite variability which underlies apparent uniformity in the human subject is well illustrated by this volume. We suppose it would be possible, if life were long enough for the task, so to map out every square inch of the human frame as to distinguish one individual from another by a sufficiently minute comparison of any part of its surface. The ear, for example, is an organ which might be so analyzed and measured as to obtain almost absolute certainty that no two specimens of it would be exactly alike. Mr. Galton has selected for this purpose the tips of the fingers, as being ready to hand, quickly imprinted, and safely recorded; impressing themselves by an operation of a few seconds, they leave the results to be worked out at leisure, and do not weary the subject with a long sitting or minute examination.

An interesting exemplification of the work is given in the vignette on the title-page. What has the appearance at first sight of a massive arch reared by some Cyclopean architect is really a photograph of the finger tips of the learned author himself. Twice over he refers in pathetic terms to the lines of cleavage in the impressions caused by disintegration of the texture of the skin through advancing years, but they nevertheless show marked traits of character, as in the broad and plastic thumbs which fill up the inner space of the arch. Whether the practical results to be derived from his researches will repay the pains he has bestowed upon them we must take leave to doubt. It will be long before a British jury will consent to convict a man upon the evidence of his finger prints; and however perfect in theory the identification may be, it will not be easy to submit it in a form that will amount to legal evidence.

Mr. Galton, with the candour that belongs to his nature, seeks far and wide for evidence that he has been anticipated in his researches. He quotes and figures a Chinese coin of the seventh century A.D., which bears the mark of a nail of the Empress Wen-teh, who accidentally pressed it into the wax model prepared by the courtly artist for her approval; but this is hardly relevant, not

being a finger print. He mentions cases where, in default of a seal, the person executing a deed has pressed his finger on to the wax, but adds that no account has reached him of trials in any court of law in which identity has been established or disproved by comparison of finger prints. That is true, and the same might be said of the apocryphal granters of rhyming charters who "in token that the thing is sooth Did bite the wax with their wang tooth." Neither tooth nor thumb was intended as a means of personal identification, but as the readiest substitute for the more usual form of stamping the wax. He quotes a delightfully characteristic order by an officer of the United States survey in New Mexico on a sutler, "Pay to Lying Bob seventy-five dollars," where the figures representing the amount are written over a mark made by the drawer's thumb; but this was not for identification, but to prevent the untruthful payee from tampering with the cheque. The only two cases by which Mr. Galton's originality is in the slightest degree affected are the system adopted by Sir W. Herschel in Bengal and the university thesis maintained by Dr. J. E. Purkenje at Breslau in 1823. Sir William appears to have used finger prints not so much for actual identification as to deter fraudulently disposed persons by the fear of identification; and his plan lacks the scientific elaboration of Mr. Galton's. Purkenje subdivided finger prints into nine different patterns, and Mr. Galton at first attempted to follow this classification, but found it entirely to fail. Moreover, Purkenje attempts no practical application of his work, and refers to it simply as the wonderful arrangement and curving of the minute furrows connected with the organ of touch. In spite of himself, therefore, our author must have full credit for his originality.

It is hardly possible, in the brief space that is available for us, to do justice to the deep research and minute analysis that Mr. Galton has devoted to his subject. No detail escapes him; and it is one ground of our want of faith in the practical utility of his methods that he is content with nothing short of perfection. "Whoever desires to occupy himself with finger prints," he says,

"ought to give much time and practice to drawing outlines of different impressions of the same digits. His own ten fingers, and those of a few friends, will furnish the necessary variety of material on which to work. He should not rest satisfied until he has gained an assurance that all patterns possess definite figures, which may be latent but are potentially present, and that the ridges form something more than a nondescript congeries of ramifications and twists. He should continue to practise until he finds that the same ridges have been so nearly followed in duplicate impressions, that even in difficult cases his work will rarely vary more than a single ridge-interval."

After this training in manual dexterity and the art of perception, the student will find that the leading patterns range themselves under three principal heads—arches, loops, and whorls—and it is by the varieties and the permutations of these among the ten fingers that it becomes possible to index and identify the finger prints of any number of individuals. A vital question to be determined is the permanence of the types; and

though the number of cases which Mr. Galton was able to obtain of impressions of the same finger repeated at long intervals of years was few—not exceeding twenty or thirty—the evidence derived from these is so minute and so fully worked out by him as to carry a strong weight of conviction. Thus the marks on the finger of a child of two years and a half, compared with an impression of the same finger made when the boy was fifteen, show forty-two points of agreement and only one of disagreement. A second question, of almost equal importance if finger prints are to be used for personal identification, is how far the configuration of the ridges is transmissible by heredity. In determining this point Mr. Galton has employed the statistical and mathematical methods of which he is a master, and establishes clearly that though the finger marks of nearly related persons have in no case been observed to be identical they possess common characters which are not to be found in those of persons not connected by blood-relationship.

An interesting part of the work is the criticism of Bertillonage. Mr. Galton is evidently not one of the experts who consider the success of that system to have been fully proved, and he thinks the enthusiastic belief in it of its supporters is based almost wholly on questionable theoretic grounds of efficiency. He justly asks for a detailed account of the methods adopted to meet the practical difficulties, especially those arising from inequalities in the distribution of the varieties of head-forms, &c., as to which he has made some curious and useful experiments. His conclusion is that whatever claims may be made as to the utility of Bertillonage are even more applicable to the method of finger prints.

Mr. Galton has been betrayed into a curious criticism upon Scripture:—

"We read of the dead body of Jezebel being devoured by the dogs of Jezreel, so that no man might say 'This is Jezebel,' and that the dogs left only her skull, the palms of her hands, and the soles of her feet; but the palms of the hands and the soles of the feet are the very remains by which a corpse might be most surely identified, if impressions of them, made during life, were available."

This may be true; there is certainly large virtue in the "if"; but, whether true or not, it is surely not proved by researches into finger prints, which are neither palms nor soles.

It is impossible to read a book by Mr. Galton without pleasure and edification; the charm of his literary style and the beauty and ingenuity of his mathematical analysis are irresistible. We hope he is destined to delight the public with many more volumes as brilliant and engaging as the present; if we add the wish that they may be devoted to subjects of greater promise of practical utility, it is because we think that work such as his is too good to be lost.

A Manual of Physics: being an Introduction to the Study of Physical Science. By William Peddie, D.Sc., F.R.S.E. (Baillière, Tindall & Cox.)—We can speak in almost unqualified praise of Dr. Peddie's little book, which is a marvellous contrast to the undigested collections of facts and illogical statements of principles that passed current in text-books of physics not

very long ago. Here we have the whole range of physics compressed within the limits of five hundred duodecimo pages, and yet every topic is treated intelligently. There is no cramming in of disconnected facts, but attention is steadily directed towards a rational apprehension of physical processes. Definitions and statements of principles are terse and clear, and the whole tone of the book is vigorous and healthy. Free use is made of the notation and conceptions of the differential calculus; but there are no elaborate displays of analysis. This is as it ought to be; but the balance of the book is unduly destroyed by a too elaborate mathematical introduction, especially in the fifteen pages devoted to the "theory of contours," where we are told, for example, that

"the contour of an object of n dimensions, existing in extension of the $(n+1)^{\text{th}}$ order, is its intersection with an object of n dimensions at every point of which some quantity has a constant value. It is, therefore, of $(n-1)$ dimensions."

Dr. Peddie, apparently, cannot trust professors of mathematics to teach their own subject; for he devotes the greater part of a chapter to investigating the values of the most important differential coefficients. A few slips are noticeable; for instance, the statement that when a screen is equally illuminated by two sources, the sources are *inversely* as the squares of their distances. Again, in the discussion of the conduction of heat through the earth's crust, the reader is told that, since the square root of 365 is approximately 19, the effect of the summer's heat is felt about 19 times as far below the surface as the effect of diurnal heat. Nothing is said as to the relative magnitudes of annual and diurnal range, and hence the reasoning is inconclusive. In the same connexion, statements are made respecting the relation of range to depth which are not true of the range as a whole, though they are true of any one of the simple harmonic terms into which the whole variation can be analyzed. The account of thunderclouds contains an error which seems to be going the round of the text-books, consisting in an attempt to show that coalescence of small drops to form large ones will raise their potential. The reasoning would be correct if the potential of a drop depended on its own charge only or mainly, but fails completely in face of the fact—which can be proved by a simple calculation—that the potential of a drop surrounded by millions of others is practically independent of its own charge. As a fair specimen of the author's style we extract the following account of Thomson's thermo-electric reasoning—a difficult subject to put clearly:—

"In order to explain the fact that, in such circuits as iron-copper, the direction of the electromotive force changes when the hot junction is sufficiently raised in temperature, Thomson assumed that the Peltier effect vanishes at that temperature at which the lines of the metals intersect in the thermo-electric diagram. The metals are then said to be neutral to each other, and so this temperature is called the *neutral temperature*. Now no heat is being absorbed or developed at the junction which is at the neutral temperature, and heat is being developed at the cold junction, for there the current is flowing from the metal of higher thermo-electric power to the metal of lower thermo-electric power. It would seem, therefore, that there is no source of thermal energy by the transformation of which we can account for the development of electrical energy. But there is no other possible source of the electrical energy, and hence Thomson was led to predict that heat is absorbed at parts of the circuit other than the junctions, either in that metal in which the current flows from hot parts to cold parts, or in that metal in which it flows from cold parts to hot parts, or in both metals."

This is a tough morsel, but not so tough as the account usually given. The book will be a favourite with good students, and is, on the whole, an excellent model of the style appropriate for physical discussions.

PROF. SIR RICHARD OWEN, K.C.E., F.R.S.

THE death of Richard Owen at the great age of eighty-eight has removed from among us one who was not only the Nestor of English zoologists, but one who was, with most Englishmen, the synonym of anatomy. For many years before Charles Darwin was known beyond the limits of a small circle, or Prof. Huxley had returned from his voyages in the Rattlesnake, the name of Owen was a household word. He was the link between the young zoologist of to-day and Cuvier, the father of comparative anatomy; from John Hunter he was only separated by Clift; he was the *protégé* of Sir Charles Bell and of Abernethy; and yet he has lived to help to bury Darwin in Westminster Abbey, to see Mr. Huxley not only resign the chair of the Royal Society, but enter the Privy Council; he has lived to see his friend's son resign the directorship of Kew Gardens, and to see F. M. Balfour be born and die. And almost all the time he lived he worked.

Just as, in looking at a great mountain, the traveller is first impressed by a sense of size or mass, so the first characteristic which strikes a reviewer of Owen's labours is the quantity of his work. The ten quarto volumes of the catalogue of the Hunterian Museum; the great work, with its 168 plates, on odontology; the three thick volumes on the anatomy of vertebrates; the four quarto volumes which contain the memoirs on British fossil reptiles; the twenty-five memoirs on the Dinornis; the five memoirs on the osteology of the marsupials; the essays on the fossil mammals of Australia and the fossil reptiles of South Africa, form a monument to his memory which alone would place him in the van of descriptive naturalists. But there is not only mass, there is also extent; the lowest as well as the highest of animals came under his observation, and he made additions to our knowledge in every group of the animal kingdom. He gave the world the first detailed account of the elegant sponge which is known as *Venus's flower-basket*, and on which he conferred the name of *Euplectella*; he was the first to supply a zoological notice of that terrible entozoic pest, *Trichina*; he made a careful anatomical investigation of four of the rarest or most interesting of marine invertebrates—of the horseshoe crab (*Limulus*), of the rare *Spirula*, of the argonaut, and of the ancient nautilus, on the last of which he wrote one of the earliest, one of the most classical, and one of the best illustrated of his numerous memoirs. He had the opportunity of dissecting such informing vertebrates as *Protopterus*, the fish with lungs, and the wingless *Apteryx*; he studied the structure of the extinct dodo. The vast giraffe, the enigmatic aye-aye, the man-like gorilla, were only a few of the mammals which he dissected and described. Nor were anthropological studies neglected, as his essays on the ancient Egyptians and the Andaman Islanders are sufficient to bear witness.

But this is far from being all. From 1834 to 1856 he was Hunterian Professor to the Royal College of Surgeons, and delivered annually a course of lectures, giving to the chair that lustre which it long possessed; he was for a time Fullerian Professor to the Royal Institution; on the revival of the Rede Lecture at Cambridge he was the first to deliver the annual discourse. He compiled a manual of paleontology, wrote for Orr's "Circle of the Sciences," and was a large contributor to the famous "Cyclopædia of Anatomy and Physiology"; to say nothing of numerous addresses and lectures to metropolitan and provincial audiences, to scientific associations, and to royal youths.

This is but a bare and dry record of what Prof. Owen did as a descriptive anatomist and teacher; it has taken no account of the admirable style in which many of these papers were written, of the speculation which animated them, of the teleology which enlivened them, or of the "fine

hints that sparkle and shine throughout his writings." Prof. Owen lived long enough to see many of his philosophical speculations not only rise to universal acquiescence, but sink into as complete rejection; but, to take an example, that "vertebral theory of the skull," around which so many battles have been fought, directed and informed the minds of investigators, and was, as hypotheses often are, a powerful instrument of research; the progress of knowledge has simply treated his theories as it treats those of every inquirer, and he only can pretend to the office of judge in these matters whose knowledge is as wide, and whose experience is as great, as that of the naturalist whom we have lost. Other generalizations, based on fuller knowledge or as yet unshaken by more modern discoveries, have become the "common intellectual property of mankind." It is to Owen that we owe the deep-seated and important distinction between homology, or structural, and analogy, or functional resemblance; he inaugurated the use of formulae in zoology by a system of dental notation; and he set an example of the application of anatomy to systematic classification, in which he has particularly been followed by younger English naturalists.

From 1828 to 1856 Prof. Owen was connected with the Hunterian Museum, and from 1856 to 1884 he was Superintendent of the Natural History Departments of the British Museum. With regard to these offices, mention need only be made here of his association with the erection of the Natural History Museum at South Kensington. A memorial of the struggle between the professor and his colleagues on the one hand and the House of Commons on the other is to be found in the pamphlet entitled "On the Extent and Aims of a National Museum of Natural History," and in the poem which he sang in 1881, when he occupied the presidential chair of Section D at the jubilee meeting of the British Association. On the completion of the removal of the collections to their new home, Prof. Owen resigned his charge and retired from official duties, receiving as a mark of favour for his services the Knight Commandership of the Bath. Every recognition of his services to these two important museums is only his due, but justice demands that we should recognize that Owen was far greater as a student and investigator than as a director or administrator.

Owen served on three public commissions—those which dealt with the health of towns and of the metropolis, and with meat supply; he was a commissioner for the great Exhibition of 1851, and a chairman of a jury at Paris in 1855; in 1857 he was President of the British Association, and he was the first President of the Microscopical Society.

Of the honours conferred on him the most notable are the Royal (1842) and the Copley (1846) Medals of the Royal Society, the Légion d'Honneur (1855), the Foreign Associateship of the Institute of France (1859), and the Prussian Ordre pour le Mérite (1851); he was one of the eight zoologists and physiologists who are Foreign Members of the American Academy; he was decorated by the King of Italy and the Emperor of Brazil; and he was in various ways connected with innumerable scientific societies and a doctor of several universities. But the honour which he cherished most was one which was not only beneficial to himself, but one that could be shared in and enjoyed by his many friends. It was the picturesque, many-gabled little cottage in Richmond Park which he occupied by favour of the Queen since 1852. In this peaceful spot—one of the most retired in that beautiful park—it was his pleasure to entertain his friends and those visitors from distant lands who came to worship at his shrine. There the geniality of his manners, the engaging interest of his conversation, the depth and breadth of his experience of life, the warmth of his sympathy, and his affectionate care for friends, both young and old, made a deep im-

Trading Company is advertised to take place on the 15th inst. at Amsterdam, when 25,000 bags of Java will be offered. Good ordinary valued at 55 1/2 cents.

TEA dull and business small. At auction 4,558 packages Indian were offered and all sold on a par with the prices ruling on Monday last, there being little competition for grades over 1s. A small auction of China green went well. The terminal market is quiet, though strong. China, November and December, buyers, 5 1/2-1/4; January, 5 3/4-1/4. India, December, spot, 8 1/4. Contracts registered 500 half-chests China and 600 chests Indian.

RICE 1s steady, and 2,500 tons, Saccaline, sailer cargo, sold at 5s. 9d., February-April, o.c.

SPICES.—The market is strong: 500 bags Java pepper fair, sold at 3 1/2-1/4. on the spot; for arrival 24-ton Saccaline white, December-April, sold at 3 1/2-1/4; and 24-ton Saccaline cloves, January-March delivery, at 3 1/2-1/4.

FRUIT.—Valencia quiet and little doing. Current slow with little doing. Provincial quoted for Patras, 25s. to 30s.; Gulf, 25s. to 30s., with fine up to 30s. Vostok, 30s. to 40s. Dates steady and in fair demand—Halvet, 14s.; Khadim, 13s.; other, 12s.

SHELLAC quiet, with a moderate business done on the spot in T. N. orange at 85s. to 90s.; A. C. garnet, 75s. Butoon B. I. 1, 55s. to 57s. For delivery 200 to 300 cases, November-December, sold at 85s. Calcutta advices report continued firmness.

GAMBIE steady, and for arrival 300 tons November-December and November-January, steamer, sold at 19s.

INDIAN RUBBER quiet, fine Para being still quoted at 2s. 9 1/4d.

JUTE.—The demand for spot and near deliveries of both old and new crop continues good, but there is little inquiry for distant positions. 1,000 bales D.K.M. and Co., November-December, steamer for London, sold at £11; and 500 bales B.N. 2, September-October, steamer, for Dundee, at £12 12s.

HEMP.—There is still no improvement to note in this market, business both on spot and for delivery being very limited, and prices barely steady. At auction very little was done. Mauritius was barely supported, only a few bales fair being placed at £25 10s. New Zealand was all withdrawn.

LINKED quieter. London Calcutta, spot, 40s. 3d.; shortly due, 40s. 3d.; Canal, October-November, 41s., sellers; November-December, 42s., sellers; Hull-Calcutta, spot, 40s.; ex ship, on passage, 40s. 6d.; new crop, 40s. 2s.; Bombay, spot, nominal; January-February, 41s. 6d.; February-March, 42s. 6d.; Bombay January-February, 41s. 6d.; November-December, 42s. 6d.; January-February, 41s. 6d.; Asst. to Continent, October-November, 40s. 6d. c.i.f.; St. Petersburg, 95 per cent. ex warehouse at Hull, 41s. 6d.; prompt shipment, 41s. 6d. The total quantity of oat from the East India is now 151,000 qrs., against last week 267,000 and a year ago 469,000 qrs.

RAPESEED slow to sell. Brown Calcutta, spot, ex warehouse, 37s. 6d.; November-December, for London, ex warehouse, 37s. 3d.; brown Cawnpore to Dunkirk, November-December, 38s. 3d., old terms; new crop, March-May, 38s. 3d., new terms, to Hamburg; yellow Guzerat to Dunkirk, November-December, 41s. 6d.; March-May to Dunkirk, new crop, 41s. 6d., old terms; yellow Cawnpore to Dunkirk, November-December, 41s. 3d.; Black Sea to Hull, for shipment, 20s., buyers.

COTTONSEED flat. Spot, 55 1/2s.; November, 55 1/2s. 6d., sellers; November-January, 55 1/2s. 6d., sellers. Hull quiet—spot, 55s., sellers; on passage, 55 1/2s. 6d. to 55 1/2s. 6d.; November-January, 55 1/2s. 6d.

POPPYSEED firm. Calcutta to Antwerp, November-December, 37s. 6d.; Bombay to Dunkirk, November-December, 38s. 3d.; new crop, 38s. 3d.

LINKED OIL quiet. Spot, pipes, water-side, 18s. 6d.; landed, 18s. 7 1/2d.; barrels, 18s. 3d.; December, 18s. 3d.; January-April, 19s.; May-August, 19s. 3d.; Hull, spot, 15s. 10 1/2d.; November-December, 17s.

RAPE OIL firm. English brown, spot, 23s. 3d.; month, 23s. 3d.; December, 23s. 3d.; January-April, 23s. 6d.; refined, spot, 25s.; Ravison, 22s.

COTTON OIL quiet. Spot, crude, 15s. 9d.; December-April, 15s. 3d.; refined, according to make and package, 18s. to 18s. 9d. Hull, spot, 15s. 10 1/2d.; November-April, 16s.; crude, 14s. 7 1/2d.

TURPENTINE steady. American, spot, 21s. 9d. to 22s.; December, 21s. 9d. to 22s.; January-April, 22s. 6d. to 22s. 3d.; May-August, 23s. 6d.

PETROLEUM quiet and easier. American, spot, 4 1/4d.; December, 4 1/4d.; Russian, spot and December, 4 1/4d.

TALLOW firm. F.Y.C., 35s.; Australian, good to fine, mutton, 25s. 6d. to 27s. 3d.; ditto, beef, 24s. to 25s.

LIVERPOOL, Nov. 2.—SUGAR.—There is still very little doing in the market for cane sugar, business being confined to 500 tons Java steeped at 12s. 1 1/2d. per cwt. Best clove dull and lower. November, 13s. 5 1/2d.; buyers, December, 14s., value; January-March, 14s. 3d.; April, 14s. 4 1/2d.; and May, 14s. 5 1/2d., buyers. Crystals dull and 3s. lower. No. 1, 19s. 6d.; No. 2, 18s.; granulated, standard, 18s. 9d.

COFFEE is dull, there being no demand for any description at the moment, and prices are without change. Cocoa firmly held on the small supplies suitable for the foreign trade available here at present, but the demand is only poor. Rice sells quietly as export account, and millers are making about late rates for the small quantity sold. Nothing reported in cargoes. SAGO FLOUR meets with a very fair amount of inquiry, especially for the better kinds of Sarawak, which are realizing steady prices ex store, 500 bags selling at 11s., but there is no demand for shipment parcels.

LINKED has had a quiet trade, and only small sales of East Indian are reported at about late rates, crushers not buying so eagerly, consequent on the fall in feeding rates. 100 bags Turkish sold at 41s. CANARYSEED is in moderate inquiry, and 50 bags Turkish sold at 72s. 6d. per 48lb. TALLOW rules very firm on scarcity, and full prices are made. PALM OIL is held for higher prices, and a fair amount of business is passing, Bonny ex store selling at £21 per ton. SEED OILS show no change. CANTON OIL is dull and easy and sellers asking 2 1/4d. for Calcutta. PETROLEUM in good demand at late rates.

ROBIN has a (rus market, common 4s. 3d. per cwt. TURPENTINE quiet at 22s. NITRATE OF SODA.—Laird and Adamson report:—After the issue of our last report the market became somewhat easier, but latterly there has been renewed firmness, and a considerable business done at a further advance, closing spot at 9s. to 9s. 1 1/2d. per cwt. To arrive the business includes port of call and due cargoes at 9s. 9 1/2d. to 9s. 1d.; August sailings, at 9s. 9 1/2d. to 9s. 1 1/2d.; September, at 9s. 2 1/2d.; October, at 9s. 1 1/2d. to 9s. 3d.; November, at 9s. 3 1/2d. to 9s. 4 1/2d.; and first half December, at 9s. 3 1/2d., all ordinary, the latest business done having been at the higher figures. At the close there are few sellers, and still higher prices are asked. Refined is held for over the above quotations. The total deliveries here for the last two weeks are 12,444 bags, against 8,755 bags same fortnight last year. Exports from this port since October 22 are 1,063 bags, making 11,196 bags so far this year. Stocks here are 51,000 bags, and imports for 1902 are 273,071 bags, against 52,500 and 254,955 bags respectively last year. Shipments from the West Coast in October have been cabled as 61,000 tons, against 170,100 tons in 1891, and loading on November 1 42,000 tons, against 144,600 tons. Recent quotations from West Coast give price of nitrate as 6s. 4 1/2d. per quintal f.o.b.

GLASGOW, Nov. 2.—The sugar market was quiet, with a moderate business in Clyde crushed at rather easier prices. Beetroot was quoted at 14s. 5 1/4d. c.i.f., 18 per cent., and after products 11s. 6d. to 11s. 10 1/4d. f.o.b., 75 per cent. Foreign refined was inactive.

PROVISIONS.

LONDON, Nov. 2.—CEREALS are quiet, but best is firm, at 52s. for Canadian and 52s. to 53s. for States of September makes, and Junys in good condition have realized 48s. to 47s. Dutch is also firm at 54s. to 55s. for choice Esams, and 4s. to 5s. for Goodas.

BUTTER.—Friesland keeps steady, owing to scarcity and the upward tendency on the other side, where a further advance of 1/2 guineas has been made—about 11s. to 11s. 1/2. Normandy is weak, and while some are at 11s. 1/2, for their ordinary the lower quotation most nearly represents the market. Danish also weaker, and much lower prices are asked.

LARD is steady. London, 54s. to 55s.; Waterford, 64s. to 65s.; kegs, 51s. to 54s.; Danish, small bladders, 55s. to 60s. American mainly unchanged—spot, 4s.; November shipment, first half, c.i.f., 4 1/2d.

who know the Oxford of to-day.

In FINGER PRINTS, by Francis Galton, F.R.S. (Macmillan and Co.), that indefatigable observer and acute interpreter of obscure biological and anthropological phenomena gives in systematic form the results of some of his latest investigations in the anthropological field. The following passage explains, in Mr. Galton's own words, the nature of the inquiry in which he has been engaged and the importance of its results:—

The palms of the hands and the soles of the feet are covered with two totally distinct classes of marks. The most conspicuous are the creases or folds of the skin, which interest the followers of palmistry, but which are no more significant to others than the creases in old clothes; they show the lines of most frequent flexure, and nothing more. The least conspicuous marks, but the most numerous by far, are the so-called papillary ridges; they form the subject of the present book. If they had been only twice as large as they are, they would have attracted general attention and been commented on from the earliest times. Had Dean Swift known and thought of them, when writing about the Brobdingnags, whom he constructs on a scale 12 times as great as our own, he would certainly have made Gulliver express horror at the ribbed fingers of the giants who handled him. The ridges on their palms would have been as broad as the thongs of our coach-whips.

Let no one despise the ridges on account of their smallness, for they are in some respects the most important of all anthropological data. We shall see that they form patterns, considerable in size and of a curious variety of shape, whose boundaries can be firmly outlined, and which are little worlds in themselves. They have the unique merit of retaining all their peculiarities unchanged throughout life, and afford in consequence an incomparably surer criterion of identity than any other bodily feature. They may be made to throw welcome light on some of the most interesting biological questions of the day, such as heredity, symmetry, correlation, and the nature of genera and species. A representation of their lineations is easily secured in a self-recorded form by inking the fingers in the way that will be explained, and pressing them on paper. There is no prejudice to be overcome in procuring these most trustworthy sign-manuals, no vanity to be pacified, no untruths to be guarded against.

My attention was first drawn to the ridges in 1888 when preparing a lecture on personal identification for the Royal Institution, which had for its principal object an account of the anthropometric method of Bertillon, then newly introduced into the prison administration of France. Wishing to treat the subject generally, and having a vague knowledge of the value sometimes assigned to finger-marks, I made inquiries, and was surprised to find, both how much had been done and how much there remained to do before establishing their theoretical value and practical utility.

Enough was then seen to show that the subject was of real importance, and I resolved to investigate it; all the more so, as the modern processes of photographic printing would enable the evidence of such results as might be arrived at to be presented to the reader on an enlarged and easily legible form, and in a trustworthy shape. Those that are put forward in the following pages admit of considerable extension and improvement, and it is only the fact that an account of them seems useful which causes me to delay no further before submitting what has thus far been attained to the criticism of others.

It is needless to say that the whole subject is handled with that rare patience and thoroughness in investigation, and that keen but cautious acumen in interpretation which are characteristic of all Mr. Galton's work. It is scarcely fair to Mr. Galton, perhaps, to mention in this connexion a work which deals with matter of a similar kind, though its method is decidedly less scientific, and its results less trustworthy in consequence. This is *HANDWRITING AND EXPRESSION*, translated and edited by John Holt Schooling from the third French edition of "L'Écriture et le Caractère," par J. Crépieux-Jamin (Kegan Paul and Co). "We cannot be accused," says M. Crépieux-Jamin, "of having exaggerated the importance of graphology in stating that it is a science of observation. Based upon physiological movement, demonstrated by the comparative method, it will be of the greatest importance when all its various parts have been well studied, and when it is possible to formulate all the laws which regulate the various movements of handwriting." In the meanwhile, however, the study of handwriting can only be regarded as a pleasant and not too frivolous pastime.

BRITISH NEW GUINEA, by J. P. Thomson (G. Philip and Son), is a most comprehensive and energetic administrator of the colony. William MacGregor. The style is often curiously affected and ambitious.

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MACMILLAN & CO.,
BEDFORD STREET, COVENT GARDEN,
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MESSRS. MACMILLAN AND CO. beg to forward the
accompanying cutting from *Black & White* of
Mar 4 1893

FINGER PRINTS. BY F. GALTON, F.R.S., &C. (MACMILLAN AND CO.)

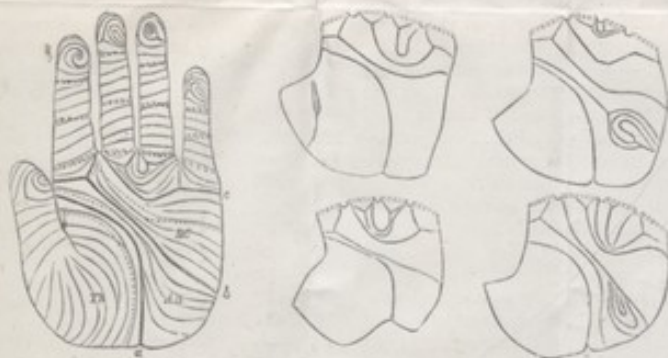
MR. GALTON has not exactly initiated, but he has worked out in scientific detail an important method of identification by the print of the finger tips. It is founded upon the fact, which he authenticates and formulates in this very interesting volume, that the finger prints of every man, woman, and child differ from those made by the fingers of all other human beings. Moreover, the print made in childhood never materially alters during life. Get the class from which jurymen are drawn to accept this proposition as a fact, establish a general system of registration founded thereon, and at once a huge mass of criminality would be checked, the *alias* of the burglar and the pickpocket



would be no longer a good defence, and pseudonymous criminality (except in literature) would become a thing of the past. But will the average jurymen bend his intelligence to the teachings of the scientist?

A distinction must be made between the markings and "patterns" with which this book deals, and the "lines" on the hand upon which the professors of palmistry found their soothsaying. These latter marks are, of course, merely creases in the skin indicating the lines of most frequent flexure, and they indicate nothing more than this. To profess to read the past history or the future fate of the owner of the lines from their form and direction is, scientifically, about as great an imposture as to profess to read a man's fate from tea-leaves or coffee grounds.

The idea of using finger prints in a systematic way as a means of



identification, was not regularly employed till 1858, the pioneer in the work being Sir William Herschel, then chief administrator of the Hooghly district in Bengal. The signatures, or alleged signatures, of the natives were found by Sir William to be, as a rule, so destitute of authenticity that he substituted for them, and with marked success, signature by finger prints. It seems curious that "Bertillonage," the method employed in France for identifying criminals by an elaborate system of measurements of the body, should not have included identification by finger prints, the only bodily marks which remain unchanged with us from the cradle to the grave.

Science Gossip March
NOTES ON NEW BOOKS.

FINGER Prints, by Francis Galton (London: Macmillan). This is one of the most original and suggestive physiological and psychological books issued for some years past. All readers of Mr. Galton's new books expect something original, and they will find it in this volume. Even superstitions have a basis of truth, however scanty, and it would seem that the medieval "science of palmistry," as well as "reading the lines" among modern gipsies are not exceptions to that rule. Perhaps the criss-crossing on the formal red seals of deeds and wills really represents those of the human skin at the finger-tips. Mr. Galton's work is a genuine and hard-worked contribution to scientific research, and appears as a very handsome and attractive volume. Characteristically enough, the illustration on the title-page is that of the finger-tips of the author, from the markings of which we can hardly doubt character as well as suggestiveness.

TELEGRAPHIC ADDRESS:
"PUBLISH" LONDON.
TELEPHONE NUMBER, 2686.

MACMILLAN & CO.,
BEDFORD STREET, COVENT GARDEN,
LONDON.

MESSRS. MACMILLAN AND CO. beg to forward the
accompanying cutting from *The Guardian* of

Mar 22 1893

Any work that bears the name of Francis Galton on the title-page is sure to combine the enthusiasm of the explorer with the patient amassing and minute investigation of facts, the keen analysis and mathematical precision, of the veteran in scientific investigations. It is so very markedly in the volume entitled *Finger Prints* (Macmillans). The author seems to feel that the title demands some explanation, and is careful to impress upon his readers that he has nothing whatever to do with the "creases or folds of the skin" which interest the believers in palmistry, and of which he says, putting his foot down at once on cheiromancy and cheiromancers, that they are "no more significant to others than the creases in old clothes; they show the lines of most frequent flexure, and nothing more." The finger-marks here treated of are simply those produced by dipping the tips of the fingers in ink, or smearing them with lampblack, and then pressing them on a piece of paper. To the examination of these Mr. Francis Galton has devoted himself with a zeal and patience which have raised the study into the dignity of a science, with a laboratory and students specially devoted to itself. The sum of the classification of some 15,000 prints of separate fingers which are in the possession of the author seems to be that there are only a certain number of variations possible among the various classes, each with its appropriate nomenclature, in which Mr. Galton has arranged them, but that these variations are so numerous that the chances of any two fingers being identical in their impressions almost amount to an impossibility:—

"The chance of lineations, constructed by the imagination according to strictly natural forms, which shall be found to resemble those of a single finger-print in all their minutiae is less than one to about sixty-four thousand millions."

The results of these investigations are carefully summed up in various chapters. On the one hand, finger-marks afford no indications whatever of temperament, character, or ability. Prints of eminent thinkers and eminent statesmen can be matched, we are told, by those of congenital idiots. Nor do they afford any decisive witness to the force of heredity. As might have been expected from the author, very careful search has been made for any testimony they might afford in this direction, but, though not without some points that seem to tend towards it, the decision is that no inquiry hitherto appears to justify a definite conclusion. On the other hand, it seems that no material change takes place in the marks during life, while the dimensions of the limbs and body alter in the course of growth and decay, the colour, quantity, and colour of the hair, the tint and quality of the skin, the expression of the features, the handwriting, even the eye colour, change after many years. There seems no persistence in the visible parts of the body, except in these minute and scarcely perceptible ridges:—"The palms of the hands and the soles of the feet are the very remains by which a corpse might be most surely identified if impressions of them, made during life, were available." Thus the possible contribution of the science to practical life appears to lie mainly as it affords an additional

means of identification. Sir William Herschel used it in this way in several departments in India, originally with a view of frightening the man who made the impression from afterwards denying his act. But afterwards he was convinced that the method might be utilised for real purposes. Finger prints were taken of pensioners to prevent their personation by others after their death, they were used in the prison and in the office for the registration of deeds, and rendered attempts to repudiate signatures or deny identity perfectly useless. So they may be used to verify signatures and render forgery impossible. In this way they were employed by Mr. Gilbert Thompson, when on Government duty in the wild parts of New Mexico. As the specimen given consists of an order for money to be paid to a gentleman who appears to have been only known as "Lying Bob," no doubt some such precaution was very needful under the circumstances. It is scarcely needful to add that any for whom this science may have attractions will find every possible explanation of its scope and purpose, and the most complete and minute directions for the study of it, in the present volume.

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Press Cutting for *J H Collins* No.....

From
ROMEIKE & CURTICE,
Press Cutting & Information Agency,
359, STRAND.

Cutting from *Glasgow Weekly Herald*

Date..... *17th* 1893.

Address of Journal

MR FRANCIS GALTON is about to publish through Messrs Macmillan & Co. a supplementary chapter to his recent volume on "Finger Prints," dealing with the decipherment of blurred finger prints.

Press Cutting for *F. H. Collins* No. *f. 13*

From

ROMEIKE & CURTICE,

Press Cutting & Information Agency,

359, STRAND.

Cutting from *St. James's Gazette*

Date *19/6* 1893.

Address of Journal

OUR BOOKSHELVES.

Blurred Finger-Prints ; Their Decipherment. By Francis Galton, F.R.S. (Macmillan.) Cloth, 2s. 6d.

A supplementary chapter to the well-known work on "Finger-Prints." The author refers minutely (helping the reader by careful photographic plates) to some new finger-impressions obtained lately from Bengal, the impressions of the fore and middle fingers of the right hand of eight different persons, made by ordinary officials, first in 1878 and 1892. He discusses the bearing of this new evidence on the question whether identification of criminals by these marks is possible. In "Finger-Prints" the evidence of fifteen persons was given ; so the proof is now materially advanced. A tabular summary of points of agreement and disagreement between the two dates shows that the disagreements are none, and the agreements varying from 5 points to 30.

Press Cutting for.....*T. H. Cole*..... No.....*14*

From

ROMEIKE & CURTICE,

Press Cutting & Information Agency,

359, STRAND.

Cutting from.....*Westminster Gazette*.....

Date.....*19/6*.....1893.

Address of Journal

GALTON, FRANCIS, F.R.S., &c., "Decipherment of Blurred Finger Prints." (Macmillan). Price 2s. 6d. net.—A "supplementary chapter" to Mr. Galton's "Finger Prints." Contains a number of plates.

Press Cutting for *F. H. Hollin* No. *f.15 64*

From

ROMEIKE & CURTICE,

Press Cutting & Information Agency,

359, STRAND.

Cutting from

Glasgow Evening News

Date

23/6 1893.

Address of Journal

something like
a real conclusion is "Decipherment of Blurred
Finger-Prints" (Messrs Macmillan & Co.), which
is a supplementary chapter to "Finger-Prints;"
but then it is written by the author himself,
Francis Gatton, and that makes all the
difference in the world. The post has just
brought me a circular from Mr Henry Froude
intimating the publication of the first of four
parts of the "Index Kewensis," which has
been compiled under the direction of Sir Joseph
Hooker, by means of funds bequeathed by
Charles Darwin. It is expensive—two guineas a
part—but no naturalist who can afford that sum
will be without it. The specimen page shows,
as is to be expected from the names associated
with the undertaking, that the work has been
thoroughly done.

f.16

TELEGRAPHIC ADDRESS:
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MACMILLAN & CO.,
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MESSRS. MACMILLAN AND Co. beg to forward the
accompanying cutting from *Scotsman* of
June 26 1893

Mr Francis Galton has written an interesting supplementary chapter to his book on "Finger Prints," on the subject of the *Decipherment of Blurred Finger Prints* (6.) Objection has been taken to finger-print evidence as a means of identification in criminal jurisprudence on the grounds that the impressions would not be taken by ordinary officials with sufficient clearness to allow of their being put to use, and that juries would not be got to convict on such testimony. Mr Galton here brings forward what might be regarded as test cases. Sir W. J. Herschel, in the course of his magisterial duties in Bengal, instituted a practice (since discontinued) of taking prints of the fore and middle fingers of the natives who executed or registered documents in the Hooghly Registration Office. Impressions were taken last year of the corresponding prints of eight of the survivors of those who executed deeds in 1878, and have been sent to Mr Galton for comparison. The results are brought out in a series of plates and skeleton charts on a sevenfold scale, prepared in what Mr Galton suggests might be the form in which such evidence would be submitted to a jury. Comparison of only a small area of the impressions shows 125 points of agreement between the 1878 and the 1892 impressions, and none of disagreement; and the remarkable character of the results is strengthened rather than otherwise by the fact that the impressions have been blurred by the use of dye or water-colour instead of printer's ink in taking the prints, and that there is further indistinctness due to the age and consequent disintegration of the skin of the subjects of the experiment.

TELEGRAPHIC ADDRESS:
"PUBLISH" LONDON.
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accompanying cuttings from _____ of

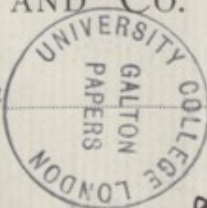
189

Glasgow Herald
June 29

Decipherment of Blurred Finger-Prints. By Francis Galton, F.R.S. (London: Macmillan & Co., 1893.)—This book forms a supplementary chapter to the author's work on "Finger-Prints." Mr Galton is, of course, widely known as the exponent of the system of registering the impressions of the fingers, which have been shown to exhibit very characteristic markings, which can be used as means of personal identification. The work under notice deals with the deciphering of blurred prints, and will be read with interest by those who have perused the author's larger volume on this topic. Mr Galton, we think, succeeds admirably in showing that the method of identification he has elucidated is deserving of investigation and application at the hands of the police and others interested in the recognition of personal identities.

Manchester Examiner
June 28

Those persons whose interest in finger prints was excited by Mr. Francis Galton's book on the subject, which we noticed some months ago, will probably follow up the study by perusing his *DECIPHERMENT OF BLURRED FINGER PRINTS* (Macmillan and Co.), which he has published as a supplementary chapter to the work referred to. In it he gives enlarged representations of, and comments upon, the finger prints made by eight different persons in 1878, and afterwards in 1892, to show that they afford "evidence of the persistence of the forks, islands, and enclosures found in the capillary ridges."



Lancet July 1

Decipherment of Blurred Finger Prints. By FRANCIS GALTON, F.R.S. Being a Supplementary Chapter to "Finger Prints." London: Macmillan. 1893. Pp. 18, with Fifteen Plates.

WE recently had occasion to notice Mr. Galton's work on "Finger Prints," in which he showed the value of impres-

sions of the palps of the fingers made with suitable material in enabling identifications of different persons to be made; for he has found that the ridges which characterise this part of the skin present certain well-marked general features which may be classified into the arch, loop and whorl, and that, in addition, the blending or the division of the ridges and their anastomoses, if they may be so termed, differ in each individual. He has now had an opportunity of comparing some finger-prints obtained from natives in India in 1878 with those of the same natives taken last year, and therefore at an interval of fourteen years. Many such impressions were taken from natives of India by Sir William Herschell and some of them have been preserved. The method of taking the finger prints in 1878 proves to have been much less satisfactory than the plan adopted more recently, for some dye was used in the former instance, whilst Mr. Galton recommends a thin layer of printer's ink. The outcome of the comparison of the two sets of impressions is strongly in favour of the persistence and unchangeability of the ridges, for there were absolutely no points of disagreement even when compared under sevenfold enlargement. Mr. Galton has been informed that the practice of taking the impression of a single digit of criminals is now constantly adopted by the Bengal police. It is clear that it is a very valuable aid to identification of an individual.

Literature.

The Administration of the East India Company: a History of Indian Progress. By John William Kaye. London: Bentley.

[Third and Concluding Notice.]

Two interesting chapters of Mr. Kaye's work are devoted to Thuggee and Dakoitee, topics which the peculiar interest attaching to crime has rendered tolerably familiar. That Colonel Sleeman and his assistants deserve all credit for their success in putting down the former of these nuisances we readily acknowledge. But that it has been utterly extirpated, never to revive, though Mr. Kaye strenuously asserts the fact, we beg leave to doubt. Thuggee is less rife than formerly, but it exists, and in certain localities even continues to flourish. Nor, in justice to our predecessors in the Government, should we forget the advantages possessed by us in dealing with this crime. The vast extent of country over which we operate secures a certain unity of organisation wholly wanting in native states. The escaped felon can no longer find within easy distance a frontier which he may cross and be safe. And Mr. Kaye wholly omits to mention a fact well known to Anglo-Indians—namely, that the police established for the express purpose of acting against Thugs has in some districts itself become a powerful though unintended engine of oppression. Armed with inquisitorial power, striking terror into the people whom it protects, it has not rarely levied blackmail under threats of false accusation; and this abuse, though notorious, is hard to detect, and still harder effectually to suppress.

As a sketch interesting in itself, and as a good specimen of Mr. Kaye's manner, the following description of a Dakoitee gang is worth quoting:—

The ordinary practice of these gangs was to set out, after the usual ritual preliminaries, in parties of thirty or forty, disguised as travellers, or pilgrims, or Med-catchers, or anything else that might promise good chance of concealment. The principal implement of their profession was the spear. The spear-head they carried about with them, concealed on their persons; the handles they either converted into walking-sticks, or buried in a convenient place. One of the party went on in advance, or some confederate at a distance—a corresponding member of the society—either brought or sent in tidings to the effect that he "had his eye on a rich house." A full description of the locality—the building itself, of its inhabitants, of the probable means of defence, as far as they could be ascertained, was communicated to the leaders of the gang; and then, the night and hour of the attack being determined upon, the gang was duly mustered, and an estimate formed of its adequacy to the intended enterprise. If the party were not considered strong enough to secure success, some "auxiliaries" were called in. These were members of robber-tribes, or local Dakoites, resident in the neighbouring villages. With their party thus augmented they took counsel together, and determined on their plan of operations. It was their policy then to separate for a day or two before the meditated attack, and then to meet at a given hour—an hour after nightfall—and to advance at once to the enterprise. They then collected the handles of their implements, fixed them into the spear-heads and axes, prepared their torches, divested themselves of all their superfluous clothes, and advanced to the attack.

It was always a nocturnal surprise. With flaming torches, and spears glittering in the broad light, they came suddenly on the sleeping inhabitants of the doomed house, and either roused them with their noise, or picked them up with the points of their weapons. Then suddenly started from their sleep, finding themselves surrounded by armed men, whose numbers their fear greatly exaggerated, the unhappy merchants, or bankers, or surprised, could seldom muster either their senses or their courage sufficiently to conduct an effective defence. If by any chance the resistance was obstinate, the Dakoites, who had not always the stoutest hearts to sustain them, were in a fair way to be beaten back. But the chances were greatly in their favour. A party suddenly surprised is always at a disadvantage. So it often happened that the luckless inhabitants, confused, bewildered, panic-struck, like people under the influence of a fearful dream, did all that they were directed to do—pointed out the places where their wealth was hidden, and went like sheep to the slaughter.

It is only fair to remark that a great part of the difficulty experienced by Government in its proceeding against Dakoitees arises from the disgraceful connivance of the people—partly produced by fear, but quite as much also by the love of plunder. Men of wealth and character do not scruple to go shares with the burglar, and rob him in turn of his ill-gotten gains. A bargain is driven by which impunity is guaranteed on the one hand, and participation in the spoil on the other, and

not only the ill-paid and venal police, but zemindars of respectability, think no shame of conniving at these nefarious practices. The head man of the village harbours the thieves who infest it, advances them money, supplies them with food and clothing, and puts their pursuers on a wrong scent; feeling no more shame in the transaction than a merchant of any European country would feel in being part owner of a privateer in war time. This—the real root of the evil—is still left untouched:—

The bare outside fact of this criminal participation of the landlords was no discovery of modern times. It had attracted the attention of Warren Hastings, who saw at a glance that it was wholly impossible to suppress Dakoitee without proclaiming the responsibility of the zemindars as accessories to the crime, and in all cases of conviction punishing them with as much severity as the active offenders. He would have made short work of these nursing mothers of crime, and hang up the fattest zemindar with as little compunction as the leanest Dakoite. As I have said before, the most vigorous measures are often the most humane; and I have little doubt that if these recommendations had been carried out and persevered in, and a heavy blow thus struck at conniving landlords, we should not now be hearing, after the lapse of three-quarters of a century, that around the immediate seat of the supreme Government—almost under the shadow of the vice-regal palace itself—gang robberies have increased to such an extent that a feeling of general insecurity has arisen in the minds of the people of these districts. These are the words, not of Warren Hastings, but of Lord Dalhousie. The governor of 1852 only repeats the complaint of the governor of 1774. The immunity which the landlords have enjoyed in the interval has been the main cause of the perpetuation of the evil. We have been much too slow in our interference with their vested interests in robbery and murder. Lord Cornwallis, when he reorganised the police department in 1792, proclaimed that landlords convicted of being accessories to the commission of a robbery should be "compelled to make good the value of the property stolen or plundered." So that, even if the regulations had been put into effect against the zemindars, it would have been merely a matter of calculation with them—a mere question of profit and loss—the balance being pretty certain in favour of the former. It is not strange, therefore, that under such regulations the landlords continued to carry on the old trade, and to participate largely in the professional emoluments of the Dakoites.

Nor are the police blameless in this matter. Their corruption is general, avowed, and flagrant. It was so in the time of Warren Hastings, and it is so now. No sufficient remedy has been found. Again hear Mr. Kaye:—

Associated with them, in the protection of the more active criminals, are the equally corrupt members of the police. This was no new discovery. Warren Hastings had as clear a perception of the fact as any superintendent of police in the present day. But although the Indian constabulary force has been remodelled and remodelled—though first one system has been tried and then another, every description of organisation that has yet been attempted has been found to be equally insufficient for the protection of life and property, and the detection and punishment of crime. Instead of protecting life and property, these men, under whatever name they draw a certain amount of salary, whether they belong to the regular police, or are the village watch, only protect rapine and disorder. To such at least point their own unaided instincts; but European superintendence, though powerless hitherto to convert the Indian police into an effective body, has done something to control its excesses. There is still much more to be done. It is the weakest point of our Indian administration.

And the following passage bears pleasing testimony to the acuteness of the native mind—to the ingenuity of that people which we regard, not indeed as too corrupt, but as too ignorant and barbarous, to be entrusted with a share in domestic administration:—

It is a distinguishing feature of the practice of these professional depredators that they adapt their ways, with wonderful precision, to the legal machinery which is brought to bear upon them—that they even turn the very engine which is designed for their destruction into an instrument of defence. They adapt their organisation to our own, and the more intricate it is the greater are their chances of evasion and escape. "The English," writes an officer of great intelligence and experience in the intricacies of these criminal leagues, "having divided the country into districts and thannas, the robbers have made it a fundamental maxim and *sine qua non* to attach themselves by divisions to thannas, in order to bribe every man of real and actual influence over the villagers to enter into a league with their paymasters—their principle being to sacrifice much in order to retain a little in certainty and safety. Now, the two classes which have supreme actual influence among the village population are the thannadars (with their myrmidons) and the revenue-farmers (with theirs). These then are the persons held in the pay of the Dakoites. To ensure regularity in this necessary particular, a robber-division is attached to a thanna, and a subdivision to a particular form. This robber-division is under a *sirdar* (or chief) of robbers; and it is among the first of his duties to pay monthly, with his own hand, the shares respectively of the thannadar and the revenue-farmer."

Nor does the corruption, as I have already intimated, stop here. "The *sirdars*," says another writer, an intelligent and zealous magistrate, "are men who travel in their

polka (palanquins), and arrange all these little affairs first with the local police, next with the magistrate's *amlah*, and eventually with the sessions *amlah* and the law officer." In short, "to use the comprehensive words of another civil officer, the highest authority on such a subject in Bengal, 'the whole plan has been got up to meet our rules of evidence, and it is carried on with the help of our ministerial and police *amlah*.' Whatever we have done, indeed, the Dakoites have turned our doings to their own uses—our revenue system, our police system, our judicial system have all been impressed into their service. Whatever may have been our administrative organisation, they have adapted to it, with consummate skill, the organisation of their criminal leagues, and out-manoeuvred us at all points."

"Set a thief to catch a thief" is an old saw. We cannot catch our own thieves, that is clear enough. Will Indians do worse than we have done? Probably not. But how, then, shall the relations and friends of directors be provided for? Mr. Macaulay was right—Indian-house politics do overshadow Indian politics, even in Asia itself.

Mr. Kaye dilates with something approaching to enthusiasm on the "vigorous" measures adopted to break up these plundering gangs. As in the case of Thuggee, extraordinary powers were given—able men selected for the special duty—money was not spared—the resources of despotism were called into play. Not, however, with any real result. Dakoitee still abounds in Bengal; and, if it does not prevail to an equal extent either in the Punjab or throughout Upper India generally, that is chiefly owing to the more warlike character of the people, who turn out in their own defence, while the timid Bengalee sits still and sees his house plundered, if he does not, under fear of torture, with his own hands point out the spot where his little hoards are deposited. In the Lower Provinces, comparing the last five years with an equal period immediately preceding, the crime has rather increased than diminished. It is said by Mr. Kaye that some symptoms of recent improvement have been shown; but his own words still bear witness against him:—"Dakoitee has not been suppressed; we found it in India, and if we were to quit the country to-morrow we should leave it there."

We cannot follow Mr. Kaye into his graphic portraiture of the "non-regulation provinces," i.e., in which the regular written law of the Company is not held binding on the administrators, but these are left to the exercise of their unfettered discretion, and invested with a simply despotic authority. It is almost a satire on the boasted "regulations" to say, what, nevertheless, is not only true but notorious, that where they are not in force government is cheaper, better, and more popular; yet this Mr. Kaye himself admits, and justly instances the Punjab as an example. That country has been divided into districts, each of which is placed under the control of a commissioner with deputies, who unite in themselves civil, military, and judicial power. Only in cases of life and death must they appeal to the Central Board at Lahore. In other respects, their rule exactly fulfils the Duke of Wellington's definition of martial law—"government by the will of the governor." No native Asiatic despotism is so organised, so uncontrolled, or so certain of obedience. Yet under this Government, presided over by the most active and able of all living Indian officers—Sir Henry Lawrence—the people of the Punjab have, since '49, evinced no inclination to disturbance or even to discontent. Some proof of the influence of individual character, and some proof also of the Oriental preference for government by men rather than government by codes. But what becomes of the "regulations" as models of legislative wisdom, if it be proved that newly-conquered provinces do better without than with them?

We pass over, though reluctantly, our author's sketch of the civilising labours of Outram, Ovens, Dixon, and Cleveland among the wild predatory tribes of the hills. These men worked well, and their labours were rewarded by success; nor is there any brighter page in the annals of the Company than that which tells of the reclaiming of the Bheels and the civilisation of Mairwarra. But what they did was done mainly by individual agency, Government only looking on. Still the performances of the servant bring credit to the master, and thus far Mr. Kaye's eulogy is justified.

The education question alone remains; and here neither our author nor any one else can succeed in making out a case for the Company. The statistics of this subject are few and simple. Up to 1823 nothing was done by Government—very little by private agency. In 1823 the Hindu College was established and endowed, Oriental study alone being pursued there. In 1835, after much controversy, the Oriental teaching was overthrown by Lord William Bentinck, and English science and literature substituted, Macaulay being among the strenuous supporters of the change. A wise regulation was at the same time framed by which the stipends formerly allowed to students during the time of their tuition were discontinued. Lord Hardinge, in the famous minute of 1844, announced that a preference should be given in conferring official appointments to natives who had passed examination at the college, or at other similar institutions—a benevolent rule, but scarcely a wise one, since its effect has been to make every young student believe that he had a right, not as matter of favour, but of justice, to be maintained in official employ at the expense of his countrymen. Something, but not much, has been done for vernacular education. The total expenditure of the Company on this score is about 60,000*l.* yearly—a sum which Dr. Marshman himself declares to be shamefully inadequate. The quality of the teaching given at the various colleges is good, but the precocious youth seldom ripens into an able, active, working man:—

I do not believe that there are half a dozen boys at Eton or Harrow who could explain an obscure passage in Milton or Shakespeare, or answer a series of historical questions, extending from the days of Alexander to the days of Napoleon, with as much critical acuteness and accuracy of information as the white-uniformed students who, with so much ease, master the difficult examination-papers which it has taxed all the learning and all the ingenuity of highly-educated English gentlemen of ripe experience to prepare, would in any such trial of skill put our young aristocrats to confusion.

All this is past dispute—the proficiency is admitted. But there has seldom been much more than the proficiency of the clever boy. A very few exceptional cases, just sufficient to prove the rule on the other side, might be adduced to show that European education has struck deep root in the native mind; but the good seed commonly sown by the roadside, and the birds of the air devour it. All the enervating and enfeebling environments of Indian life, at the critical period of adolescence, closed around the native youth, to stultify and to deaden both the intellectual faculties and the moral sense. The hookah and the zenana did their sure work. And in a year or two there was little left of the bright-faced, quick-witted boy who could put the *Penseroso* into good English prose, tell you who were Pepin and Charles Martel, and explain the character of the "self-denying ordinance" as accurately as Hallam or Macaulay.

Much is professedly done by missionaries; but though they spend 180,000*l.* yearly, and educate 120,000 children, the effects of their labour are inadequate to its amount. The fanatical zeal and want of intellectual discipline common among this class have gone far to lessen the *prestige* of European wisdom among a people remarkably subtle and sceptical, though Dr. Duff and some others deserve mention as honourable exceptions. Government wisely stands neutral, refusing to take any part in proselytising enterprises, whereby it has drawn upon itself the same kind of honourable odium which Lord Derby incurred as founder of the Irish national schools. But this negative merit is all to which the Company can lay claim. Next to public works, there is no department of Indian administration so neglected as the educational. Better things may be hoped for the future, especially if Sir C. Wood's bill does not pass.

We have done with Mr. Kaye, and, though we differ from much of what he has written, and cannot but regard him as in some sort a partisan, we admire his talent, applaud his general fairness, and part from him in kindness. Of all books written to supply the momentary demand for Indian information, he has written the best. His style is clear, and not without point, though we occasionally meet with a passage which strikes unpleasantly upon our ear as an echo of Macaulay. His statistics, whenever we have been able to verify them, we have found accurate; and this is a rarer merit than many people would readily believe.

Cranford. By the Author of "Mary Barton," "Ruth," &c. London: Chapman and Hall.

A PEACEFUL country place—just large enough to be dignified with the title of town—secluded in position, primitive in manners, quaint as to its architecture, patriarchal in all its social habits, "old fashioned" in short, in every point of view and every sense of the word,—such is the "Cranford" which gives a name to Mrs. Gaskell's new romance and a local habitation to her characters. These latter are in their turn fit denizens and natural products of the selected locality. Simple-minded virgins who derive their code of etiquette and date their day of beauty and flirtation from the model era of George the Third's Queen Charlotte; dowagers who have retired to distant Cranford upon the experiences of high life and of busy cities which they have gathered in some provincial capital; homespun spinsters who hold high social rank because their ancestor was rector, or a distant connection the baronet of provincial grandeur,—these, with a fair sprinkling of aspiring parvenus who struggle into the society of Cranford "exclusives," despite the suspicion of trade or the reality of a plebeian name, are the homely personages with whom the authoress wishes, and compels, her readers to feel an interest. With such scenery and actors the drama is naturally a quiet one. There is no stirring incident and no hero throughout the volume. Cranford, as we are told at the outset, hardly possessed a masculine inhabitant, at all events of any worth knowing or mentioning. Two or three characters appear upon the scene; but they are mere accessories necessary to the development of the story, and act but the part of walking gentlemen in the feminine tragedy-comedy playing out around them. Judging from the rôle assigned to them in her book, we should be almost inclined to believe that the authoress, like her own excellent Miss Jenkyns, "despised the modern idea of women being equal to men. Equal indeed! she knew they were superior."

Upon the single thing kept clear for the gentler sex—a drama of deep though subdued interest is represented. We have met with few pictures of English life in the country at once so pleasing and so true as those delineated by Mrs. Gaskell. How different from the spasmodic existence and slightly-veiled depravity described by the French historian of the *vie provinciale*! How different also from the servants-hall vulgarisms and cockney rarities which we find in the sketches of Trollope and Howitt? The authoress of "Ruth" and "Cranford" gives us something purer than the first, and something truer than the last. We are allowed to smile without bitterness at intrigues which involve nothing but priority in some fashion ten years post-dated from the *Belle Assemblée*, and laugh without contempt at the troubles arising out of the awkwardnesses of a rustic servant girl, evidently a descendant from one of the ploughboy flunkies in Goldsmith's comedy:—

I undertook the management of the office, and told her I would instruct Martha in the art of waiting, in which it must be owned she was terribly deficient; and that I had no doubt Major and Mrs. Jenkyns would understand the quiet mode in which a lady lived by herself in a country town. But she was sadly flattered. I made her empty her despatch-box and bring up two fresh bottles of wine. I wished I could have prevented her from being present at my instructions to Martha; for she frequently cut in with some fresh direction, maddening the poor girl's mind, as she stood open-mouthed, listening to us both.

"Hand the vegetables round," said I (foolishly, I see now—for it was sitting at more than we could accomplish with quietness and simplicity); and then, seeing her look bewildered, I added, "Take the vegetables round to people, and let them help themselves."

"And mind you go first to the ladies," put in Miss Matilda. "Always go to the ladies before gentlemen, when you are waiting."

"I'll do it as you tell me, ma'am," said Martha; "but I like lady best."

We felt very uncomfortable and shocked at this speech of Martha's; yet I don't think she meant any harm; and, on the whole, she attended very well to our directions, except that she "asked" the major, when he did not help himself as soon as she expected to the potatoes, while she was handing them round.

Even in the following pleasant quiz upon female *inconsistency*, though there may be a trifle of exaggeration, there is not an iota of ill nature. Information is sought respecting a certain Peter who disappeared years ago,

and is suspected to be somewhere in the East:—

I remember asking Miss Pole (and I thought the question was very opportune, for I put it when I met her at a call at Mrs. Forrester's, and both the ladies had known Peter, and I imagined that they might refresh each other's memories); I asked Miss Pole what was the very last thing they had ever heard about him; and then she named the absurd report to which I have alluded, about his having been elected great Lama of Thibet; and this was a signal for each lady to go off on her separate ideas. Mrs. Forrester's start was made on the Veiled Prophet in "Lalla Rookh"—whether I thought he was meant for the Great Lama, though Peter was not so ugly, indeed, rather handsome if he had not been freckled. I was thankful to see her double upon Peter; but, in a moment, the delusive lady was off upon Rowland's kalyde, and the merits of cosmetics and hair oils in general, and holding forth so fluently that I turned to listen to Miss Pole, who (through the flames, the beasts of burden) had got to Peruvian bonds, and the Share Market, and her poor opinion of joint-stock banks in general, and of that one in particular in which Miss Maty's money was invested. In vain I put in, "When was it—in what year was it, that you heard that Mr. Peter was the Great Lama?" They only joined issue to dispute whether flames were carnivorous animals or not; in which dispute they were not quite on fair grounds, as Mrs. Forrester (after they had grown warm and cool again) acknowledged that she always confused carnivorous and graminivorous together, just as she did horizontal and perpendicular; but then she apologised for it very prettily, by saying that in her day the only new words made of four-syllabled words was to teach how they should be spelt.

The only fact I gained from this conversation was that, certainly Peter had been last heard of in India, "or that neighbourhood;" and that this scanty intelligence of his whereabouts had reached Cranford in the year when Miss Pole had bought her India muslin gown, long since worn out (we washed it and mended it, and traced its decline and fall into a window-blind, before we could go on); and in a year when Wombwell came to Cranford, because Miss Maty had wanted to see an elephant in order that she might the better imagine Peter riding on one; and had seen a box-constructor too, which was more than she wished to imagine in her fancy pictures of Peter's locality;—and in a year when Miss Jenkyns had learnt some piece of poetry off by heart, and used to say, at all the Cranford parties, how Peter was "surveying mankind from China to Peru," which everybody had thought very grand, and rather appropriate, because India was between China and Peru, if you took care to turn the globe to the left instead of the right.

We have left untouched the story of this book, with which a large circle of readers are already acquainted, from its appearance in *Household Words*; but, believing that England has many nooks like Cranford, we acknowledge the talent of the artist who has depicted them with so many touches of quiet and feminine pathos.

The Narratives of an Explorer in Tropical South Africa. By Francis Galton, Esq. London: Murray.

THIS is a real book of travels after the old models, and Mr. Galton is a real traveller—not one of the pretentious class of tourists who rush into print on the strength of a few nights' bivouac in the desert, a lion-hunt, and, perhaps, a skirmish with Indians or banditti. Since the premature death of Ruxton, the most indefatigable of explorers and the most fascinating of storytellers, we have seen nothing better of its kind than this little volume. In some respects, indeed, Mr. Galton has the best of the parallel; for Ruxton, with all his energy, never achieved anything in the way of discovery. His African attempt was a failure; whereas our author, starting from nearly the same point, actually penetrated three hundred miles into an unexplored tract, visited a tribe which no European knew except by report, and reached a higher parallel of latitude than any traveller on the south-western coast of Africa had yet attained. He tells his story, too, in a plain, off-hand way which marks him as the very opposite of a bookmaker; neither swaggering about his perils nor affecting to despise them, but taking them as matters of course, necessary to be undergone in such a journey, and forming part of its inevitable accompaniments. Why he went, or with what object, except to gratify a love of wandering, we are not told, nor do we greatly care to know. A man well-to-do in the world is not called to account by his neighbours for leading a life of respectable inactivity; and, while one costly expedition is sent out after another in search of the North Pole or the North-west Passage, a private individual deserves no censure because, unpaid and unemployed, he chooses to risk his life in promoting geographical science.



Mr. Galton sailed for the Cape in 1850, intending to make Algoa Bay his point of departure, and thence to strike northward for Lake Ngami through the Boer country. The disturbed state of the colony induced him to alter his plans, and, after some months of uncertainty, he selected Walvisch Bay, on the Atlantic coast (lat. 23 deg., long. 14 deg. 30 secs.), as affording the most convenient access to the interior. Nothing, according to our author, can be more desolate than the whole line of seaboard between the Orange River and the Portuguese territory to the north. Destitute of vegetation, of water, and almost of inhabitants, it interposes an insuperable barrier to commerce with the interior. But the natives inland have no reason to complain; for this desert, which the missionary has penetrated, repels the slave-trader. Walvisch Bay has been reached overland from Cape Town, but it is a journey of four months, and dangerous. The missionaries receive supplies and letters by a vessel chartered for the purpose, which touches once in two years. No other ships call there. Fresh water can only be had at a single spot near the coast, and that more often brackish than sweet. The missionary station of Scheepmansdorp, one day's journey distant, is not much better off. The coast is peopled by a scattered Hottentot tribe, over whom missionaries exercise some influence, and who live in perpetual feud with the negro Damaras of the interior.

From this pleasant locality Mr. Galton proceeded to Otjimbingue and Barmen, distant some two hundred miles from the sea, the latter of which posts became the centre or pivot of his more distant expeditions. He made his way (February to June, 1851) to a spot called by him Ondonga, beyond the 18th parallel of latitude, and five hundred miles from Barmen by the track which he followed; was there brought to a standstill, partly by the refusal of the natives to let him pass, partly by the exhausted state of his cattle; returned unwillingly to the southward; again set off in a due-easterly direction across the plains, and reached the Hottentot station of Tounobis, 250 miles south-west of the 'Ngami Lake; once more retraced his steps to the coast, and re-embarked, in January, 1852, from Walvisch Bay, after fourteen months of wandering in the least-known tracts of the globe. His apologies for penetrating no farther, though quite superfluous, are worth the consideration of stay-at-home critics:—

A question is commonly put to explorers, "Why could you not go farther when you had already succeeded in going so far?" and the answer to this is, that several independent circumstances concur in stopping a man after he has been travelling for a certain time and distance. He must rest, for his cattle become worn out; his articles of exchange, which are his money, expended; and, indeed, the medium of currency among the people he at last reaches being unknown to him has of course been unprovided for. His clothes, necessities, luxuries, all become exhausted, and the capital out of which he has to support himself fast disappears. On the other hand, infinite difficulty is found in acquiring the confidence of a strange nation; a new language has to be learnt; native servants refuse, and are unfitted, to accompany their master in countries strange and probably hostile to them, and whom months of joint labours had educated into a kind of sympathy with his cause; and so, when an explorer intends to cross the frontier of a neighbouring tribe, he finds that all his old travelling arrangements are more or less broken up, and that the further progress of the expedition will require nearly as many preparations and as much delay as if it were then about quitting the borders of civilisation. But his energies are reduced, and his means become inadequate to the task, and therefore no alternative is left him but to return while it is still possible for him to do so.

The days are gone by when single adventurers, by land or sea, could hope to discover a terra incognita, or lay open the interior of a continent. The outlines of the world's map are complete, and nothing is left except to fill them in. Only three fields of discovery on a large scale remain—Central Africa, Central Australia, and the Steppes of Tartary. Of all these our knowledge is imperfect; but, compared with what it was 25 years ago, the progress made seems more than satisfactory; and it appears likely that by the commencement of the twentieth century the explorer's occupation will be gone.

The practical results of Mr. Galton's wanderings are twofold. He has ascertained the existence of a practicable communication from Lake Ngami to the Atlantic; and his journey among the Ovampos proves that the barren-

ness of the south-western coast does not extend to the interior. He has thus not only himself succeeded, but has probably opened a route by which others may follow farther. The difficulties of his journey were considerable, the obstacles in his way being, want of water, loss of cattle by beasts of prey, the suspicions and jealousies of native chiefs, and, above all, the impossibility of estimating distances beforehand from native testimony. This arose, not so much from ignorance, apathy, or wilful deceit on the part of the informants, as from an utter inability to compare, or to form an abstract idea. We are not aware that this distinguishing feature of barbarian organisation—which may also be traced in that of the more intelligent animals—has ever been more clearly brought out than by Mr. Galton. He is here speaking of the Damaras:—

They have no comparative in their language, so that you cannot say to them, "which is the longer of the two, the next stage or the last one?" but you must say, "the last stage is little; the next, is it great?" The reply is not, it is a "little longer," "much longer," or "very much longer"; but simply "it is so," or "it is not so." They have a very poor notion of time. If you say, "Suppose we start at sunrise, where will the sun be when we arrive?" they make the wildest points in the sky, though they are something of astronomers, and give names to several stars. They have no way of distinguishing days, but reckon by the rainy season, the dry season, or the pig-nut season. When inquiries are made about how many days' journey off a place may be, their ignorance of all numerical ideas is very annoying. In practice, whatever they may possess in their language, they certainly use no numeral greater than three. When they wish to express four, they take to their fingers, which are to them as formidable instruments of calculation as a sliding rule is to an English schoolboy. They puzzle very much after five, because no spare hand remains to grasp and secure the fingers that are required for "units." Yet they seldom lose count; the way in which they discover the loss of one is, not by the number of the hand being diminished, but by the absence of a face they knew.

Once, while I watched a Damara floundering hopelessly in a calculation on one side of me, I observed Dinah, my spouse, equally embarrassed on the other. She was overlooking half a dozen of her new-born puppies, which had been removed two or three times from her, and her anxiety was excessive, as she tried to find out if they were all present, or if any were still missing. She kept puzzling and running her eyes over them backwards and forwards, but could not count—how evident it was she had a vague notion of counting, but the figure was too large for her brain. Taking the two as they stood, dog and Damara, the comparison reflected no great honour on the man.

One of the Damara superstitions makes it difficult to buy or sell meat among them. They hold it to be in some sense common property, and every man claims his share of a slaughtered animal, under penalty of a curse if refused. Something of the same feeling prevails, or used to prevail, among the Irish peasantry, respecting the right of casual applicants to the "bit and sup."

The Ovampos, to whom Mr. Galton introduces us, are a superior race. They are farmers and not shepherds; live separately among their fields, a fact which indicates a peaceful state of society; their country, a high tableland, is healthy; and the population Mr. Galton estimates at about 100 per square mile. Their boundaries, and consequently their numbers, are unknown. They have no dealings with slave traders; and, though not inhospitable, rather avoid intercourse with strangers. Firearms are unknown among them; their bows and arrows are rude; they sleep in diminutive but neatly-made huts; use copper, but have no iron. Two yearly caravans to the southward constitute their whole trade in that direction. Of Benguela, the Portuguese settlements there, and the countries lying northward, they either knew or would tell nothing. We are left in the dark as to their mode of government; but Mr. Galton bears witness that they are "a kind-hearted, cheerful people," orderly and humane withal, of which the proof is, that their old and sick are carefully tended, instead of being left to die. The head-quarters of the tribe might be more easily reached from Benguela than from Walvisch Bay, and this route our author recommends to his successors.

African sport is an exhausted topic; and Mr. Galton, though he occasionally bagged rhinoceroses, lions, and giraffes, does not dwell on his exploits in this line. It is curious that of all the larger sort of wild beasts the lion should be the least dreaded by savages. The elephant, the rhinoceros, and the buffalo, are all more dangerous customers.

Meliora; or, Better Times to Come. Being the Contributions of many Men touching the Present State and Prospects of Society. Edited by Viscount Ingestre. London: Parker and Son.

THE "prospects of society," in the picture sketched by the well-meaning authors of this and the preceding series of essays under the same title, are bounded by a narrow and low horizon. Society, in their view, comprises solely its most degraded class, or at best that class of which nothing but their youth encourages the hope that any of its members will rise above the level of the workhouse and the gaol. The sketches of social condition, therefore, presented in the volume before us are necessarily imperfect; and the prognostics of "better times to come" which it contains are deduced but from a single source, and directed towards only a single end, out of the manifold incitements to hope and effort with which modern society is so richly endowed. Written as they are with much ability and a praiseworthy sincerity of purpose, almost all the papers of which the volume is composed are essentially one-sided. There is a truncated look even in the best of them.

We say thus much with no intention to disparage the efforts of the benevolent contributors to the work in our hand. In attacking the social evils of the time in their lowest and most sordid developments—in portraying the lineaments and planning the amelioration of a "society" which has never partaken the enlightenment or enjoyed its due share in the inheritance of knowledge, comfort, and well-being that has fallen to the lot of the contemporary generation—the writers in "*Meliora*" have undertaken a most arduous enterprise, and deserve a good report from the critic, if only for the energy with which their endeavours have been addressed to the appointed end. Glancing through their successive papers, we find, that, under different titles, the main subject is always the same, and the suggested remedy one and indivisible. Whether Lord Cardigan reprints his "Address in aid of the Evening Classes for Young Men," or "S.G.O." treats of "Immortal Sewerage," or Mr. Leigh of "Juvenile Offenders," or the noble editor himself of "Social Evils, their Causes and Cure," we find the same evil deplored, the same remedial measure prescribed, by each and all of them. For the cause, ignorance—for the cure, education—is their common topic of remark and exhortation. How dense the former, there are a multitude of striking facts set forth and variously illustrated by the several authors. How urgently wanted, and how eminently applicable, is the latter, we find enforced in many passages eloquently and earnestly written. Altogether the book presents a most forcible appeal for the establishment of an energetic and comprehensive system of education. Its design and execution will often induce the reader to exclaim with Horace, *Vixit Meliora, proleque*.

Isthmus of Darien Ship Canal. Second Edition. London: Effingham Wilson.

DR. Cullen's book, though not very interesting, is useful as a repository of facts connected with the Darien Canal. Its chief value is derived from the personal acquaintance of the author with its subject. To Dr. Cullen is undoubtedly due the credit of having been the first pioneer of that route, which in a few years' time will be traversed by the great Pacific and Atlantic Canal, passing as it does through a country which no white man had entered since the days of the buccaniers. In some respects we think the author's generalisations from his own experience are more hasty than becomes a scientific writer. Thus, he pronounces the climate of the isthmus not unfavourable to Europeans—whereas it is well known that the combination of tropical heats, alluvial soil, and constant rains, renders this coast one of the most unhealthy in the known world. Very full details are furnished respecting the projected canal, of which the total cost is estimated at twelve millions—a sum, we believe, larger than has ever been expended, in any age of the world, on a single work—the great Ganges Canal, the pride and boast of Indian governments, requiring for its completion only one-eighth of that sum. The canal is to be without locks, and, as the ebb and flow of the tide produce a constant scour, not only will vessels be assisted in their transit, but it is probable that a constant widening and deep-

ening of the excavation will take place, until what was at first an artificial channel becomes an arm of the sea. Messrs. Fox, Henderson, and Brassy are not men likely to fail in an undertaking of this kind: and the only doubt is—will it pay? An income of half a million yearly is wanted to replace the original investment, exclusive of working expenses, which are likely to be considerable. On the other hand, there seems to be no danger from the competition of the Nicaragua line—an inferior work, fitted rather for the accommodation of the coasting trade than for the opening of an interoceanic passage for vessels of large draught. All the aid which European Governments can give to this great design will, no doubt, be tendered; and by none more readily than that of France, whose Emperor, some years ago, wrote a pamphlet on the subject.

Selected Series of French Literature. No. I. Madame de Sévigné. London: Crookford.

PLEASANT and readable sketches principally of the classic memoir-writers of French society in its Augustan æra, among whom the first place is assigned appropriately to "a lady always in the fashion."

Russian Turkey; or a Greek Empire the inevitable Solution of the Eastern Question. By G. D. P. A. Pamphlet. London: Saunders and Stanford.

ADVOCATING the claims of the eleven millions of Christian subjects of the Porte in accordance with the hints thrown out by Sir H. G. Ward, and enforcing the suggestions of Marshal Marnett, in the event of the invasion of Turkey by Russia.

The Danger—The Remedy. A Few Remarks on the Prospects of Conservatism; addressed to Sir Bulwer Lytton, Bart. A Pamphlet. London: Bosworth.

BRIEF, true, and to the point, as far as it goes; emphasising the necessity of preparing educational instruments to neutralise the incendiary labours of the Radical propagandists, the "Spottis" and "Burlings" of journalism; drawing attention in respect of the "Danger," but meagre in practical suggestions of the "Remedy."

The Reform of Testamentary Jurisdiction. A Pamphlet issued by the Committee of Proctors in Doctors' Commons. London: Butterworths.

VALUABLE as a review by qualified Civilians of recent proposals for dispensing with their special vocation; insisting on the importance of maintaining it for national purposes; and deserving attention if only for the evidence quoted in the appendix.

Remarks and Suggestions on the System of Farming adapted to the Climate and Soil of the County of Carmarthen. A Pamphlet. London: Ridgway.

THE views of a practical agriculturist, conversant with errors in the system of cropping at present pursued in this part of the Principality, for the printing of which the county is indebted to Lord Emlay.

The Memoirs of a Stomach. London: Painter. HEAVY as a joke, and slight as a medical treatise, but containing some useful sanitary suggestions at the end.

Modern Domestic Cookery, based on the well-known Work of Mrs. Rundell. A new and revised Edition. London: Murray.

THE statement in the preface, which we can rely upon, that upwards of 210,000 copies of this work have been sold, is of itself sufficient testimony to its excellence, for practical persons are here the judges in a question which concerns them. The novel features of value introduced into this edition are—a great increase in the number and variety of the recipes; a simplification of the terms of art in which they are expressed; the printing of numbers and quantities in figures; and tables for computing household accounts. We should add also, that it is illustrated. Independently of the wholesale contribution of recipes from certain erudite personages, we observe that care has been taken to obtain the secrets of some *opsonia* of particular artists. Thus we observe *inter alia* the Kretschmann pudding, the pleasant and ingenious device of a rising man-cup who is a candidate for future fame; and from such little indications as this of vigilant attention to the most recent social discoveries we infer the general completeness of the publication.

The History of Uncle Tom's Countrymen, &c. London: Partridge and Oakley, Paternoster-row.

THE incidents of negro life, as too many negroes still find it, are traced in this little volume from the first

capture during some African raid, through the horrors of the middle passage, to the ultimate condition of hopeless slavery upon a Cuban sugar estate, or in an American cotton plantation. The frightful narrative is illustrated by the pictorial representation of a slave-ship, and justified by extracts from authentic documents. As the moral of his story, the author impresses upon Englishmen his conviction that, by continuing to purchase the larger proportion of the United States cotton crop, they are rendering themselves partners in the guilt of the slave trade, and that the precarious nature of our supply of the article, with all its incalculable perils to the fabric of our prosperity, is the just retribution for this national sin.

OUR LIBRARY TABLE.

Classic and Historic Portraits. James Bruce. Hurst and Blackett.
Memoirs of Bishop Bathurst. By Mrs. Thistlethwaite. R. Bentley.
The Chateau. 3 vols. R. Bentley.
Diogenes. Vol. I. J. Beaumont.
Moland Metropolitan Magazine. July. Hall, Virtue, and Co.
The Family Treasury. Hindson and Sturgeson.
The Turks in Europe. Bayle St. John. Chapman and Hall.
Travels in the Steppes of the Caspian Sea. By Xavier de Hell. Chapman and Hall.
The Striker. By Vinet. A pamphlet. Savill and Edwards.
History as a Condition of Social Progress. By S. Lewis. J. Murray.

Fine Arts.

PURCHASES FOR THE NATIONAL GALLERY. "THE GIORGIONE."

THE attention of our readers has probably been drawn to several letters which have appeared in the morning newspapers relating to purchases recently made for the National Gallery at the various sales of pictures which have occurred during the present season. In our notice of the sale of the Spanish collection of the late King of the French we expressed a warm approbation of the selection made by the trustees on that occasion, and we have only to regret that their purchases were not more numerous and did not include all the pictures worthy to hold a place in our national collection. We suspect that the zeal of the trustees and the Chancellor of the Exchequer is paralysed by the hostile criticism, not to say invective, which their every act is sure to provoke; but public men in England should be hardened to such attacks, and, conscious of integrity and honest intention, should trust to time and the good sense of the country for their justification. On the occasion of the Spanish sale to which we have adverted we expressed our sense of the injustice with which the trustees had been criticised, and of the illogical arguments which were used against them.

An interesting and able letter appeared in the *Times* newspaper of Tuesday relating to the purchase of a picture by Giorgione, made at the sale of the late Mr. Woodburn in the course of last week. We have no intention of questioning the accuracy of the facts so broadly and so distinctly stated by Mr. Morris Moore, but we think the purchase, even on his own showing, cannot be considered as an injudicious one. The painting said to be by Giorgione represents a warrior paying his devotions at the feet of the Virgin Mary, who is seated with the infant in her arms, attended by St. Joseph, and a page appears in the background holding the knight's war horse. This picture, which Mr. Moore tells us had been bought and sold for a small sum, was, in his opinion, a very fine one, when he first saw it at Florence, and he might himself have been the purchaser. The friend to whom he ceded it seems to have been unworthy of the possession, for he not only destroyed the surface of the picture, but subsequently "stippled it over," in the critic's phrase, and thus obscured every vestige of the original painting. If this statement is not exaggerated, it would still be possible to remove this superficial coat of painting, and to reduce the picture to the state in which Mr. Moore saw it when in the hand of the restorer, and thus to preserve it as a precious relic and curious example of the method in which the old masters worked. We cannot but hope, however, that Mr. Moore's zeal has misled him, and that the damage has not been so extensive or so irreparable as he supposes; that a careful hand might remove the superficial restoration, and still leave us a fine and interesting work of art.

This picture, which we think erroneously attributed to Giorgione, possesses high qualities both of design and colouring. The composition is striking and unusual; the draperies are folded into those broad and monumental masses which the early masters loved. The landscape is of great beauty; and the rich and mellow colouring, in spite of all restoration, is such as could proceed from no school but that of Venice. It is not that we think it unworthy of the master to whom it is attributed, but we think the evidence to prove it his wanting. The works of Giorgione are well known, and have been carefully catalogued. They were highly esteemed and eagerly sought for during his short life, and after his early death. He

was much engaged in fresco-painting; his oil pictures were few; and we think so important a specimen could hardly have escaped the notice of his biographers; but, further still, we think the internal evidence insufficient. The works of Palma Vecchio have sometimes been confounded with those of Giorgione. Pordenone was his imitator and survivor. He was at least equal to his celebrated contemporary in invention, and not much inferior in richness of colouring, simplicity of design, and breadth of effect. His pencil was rapid, his fancy prolific, and his works are numerous.

Mr. Morris Moore, whose opinion is decidedly worth attention, is inclined to attribute the picture to Giovanni Bellini, and his judgment is certainly corroborated by the introduction of two partridges into the foreground—a whimsical method of identifying his pictures to which master frequently resorted. The figure of the Virgin, particularly the action of her right hand, wants the vigour of either Giorgione or Pordenone, and the head and shoulders of the kneeling figure bear no proportion to the diminutive limbs; but, on the other hand, the style of painting is freer, and the composition more picturesque, than that of any work of the master with which we are acquainted. The "Christ" at Emmaus, in the Church of St. Salvatore at Venice, to which it bears some resemblance in style, is more formal and less original in its composition. To any of these masters we think the disputed work might with more plausibility be assigned than to Giorgione.

It is to be regretted that pictures are so frequently misnamed, not seldom, we fear, intentionally. Titian and Giorgione were not exceeded, hardly perhaps equalled, by any of their contemporaries. Their names stand, therefore, first amongst Venetian painters in the collector's list. The principal collections, both in France and England, were made before names of inferior note were familiarly known, and to Titoretto and Paul Veronese were attributed all those works which it was found impossible to assign to their more celebrated contemporaries. Thus the names of excellent painters have been suffered to fall out of the market, and a jealous proprietor resents as an insult to his collection every attempt to restore to the true master the identity of which he has been robbed. But there is no reason why the merits of Palma Vecchio, Pordenone, Bonifacio, and Polidoro should not be recognised, or why they should be cheated of their immortality.

BRITISH INSTITUTION.

[Third Notice.]

No. 3, "The Charity of St. Thomas de Villanova," by Murillo, was purchased by Mr. Thomas Baring at the late auction of Spanish pictures for the enormous sum of 710*l.* It is very slightly painted, and was probably intended merely as the sketch for some larger picture. We do not admire the composition. The principal figure in the piece is a Benedictine monk in the black robes of his order. The drawing is careless and faulty. It has been greatly repainted, but so unskillfully that we are justified in the supposition that the restorer's touches were wholly, or nearly, unnecessary, and that they might be removed without serious injury to the picture.

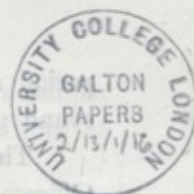
No. 133, "The Cardplayers," by Wilkie, is in his earlier and happier manner. If he had not the transparency of colour and the exquisite execution of the Dutch masters, his imagination was brighter, his subjects have more of story, his figures of character and expression; and some tender and pathetic touch of nature frequently gives them an interest wholly wanting in the Dutch and Flemish schools.

No. 142, "The Judgment of Solomon," by Haydon, has some of the extravagance and much of the talent of that unfortunate painter. To be seen to advantage, it should be placed in a church or at the end of a long gallery. The scene is finely conceived, but the exaggeration of the executioner's attitude is the more to be regretted, as he is one of the principal actors in the piece. The figure of Solomon is fine, but it cannot be admitted as wholly original; we are unavoidably reminded of the composition of Poussin in the Louvre, who, in treating this subject, has realised the same conception of the wise young judge. Several of the figures are well drawn, and the general tone of colouring is rich and vigorous.

Of the Italian school there are several fine specimens. No. 25, entitled "Due Frati," by Fra Bartolommeo, has more subject than the framer of the catalogue is aware of. It represents that interview between Saints Francis and Dominic, the two great apostles of the Mediaeval Church, and champions of the regular clergy, who, on the opposing principles of persuasion and coercion, divided the Catholic world between them. Dante celebrates the meeting of these two luminaries:—

"L'un fu tutto serafico di ardore
L'altro per sapienza in terra fuo
Di cherubini facea uno splendore."

No. 53, "A Virgin and Child," by Andrea del Sarto, like the last-named picture, from the collection of Lord Wenlock, is well preserved, and displays the graceful simplicity, massive drapery, and grave dignity which the painter learnt from the noble com-



WAYS AND MEANS OF CAMPAIGNING.

THE helplessness of our soldiers, when they are thrown for awhile upon their own resources, has been so frequently insisted upon and deplored in the Evidence taken before the Sebastopol Committee, and in speeches in both Houses of Parliament that, while it becomes impossible to doubt it as a fact, there arises a serious question whether, and in what way, we should attempt to remedy it.

Now, as matters bearing upon this question have been my special study in extended travel, so far as to have induced me to write upon them*, quite irrespectively of the present war, I thought myself justified in communicating to the military authorities a scheme that I had matured to meet the present occasion, and, whilst my proposal remains under consideration, I embrace the opportunity of putting what had been scattered over many pages of writing, at different times, into the present condensed and legible form. At the same time, I must observe, that I send this Circular as a private communication, and to no large number of persons.

To proceed:—I have offered my gratuitous services in organising a **SCHOOL OF INSTRUCTION** in such of the "Ways and Means of Campaigning" as fall under the following heads:—

1st. The best of those **MAKESHIFTS AND CONTRIVANCES** which those people adopt who have been thrown on their resources in all parts of the world.

2nd. The elements of those **HANDICRAFTS** which experience has shewn to be the most useful in those circumstances.

My wish is to reduce the teaching of the matters to a regular system. I am quite convinced that it can be done, and that an interesting and very useful course in them could be afforded to the army generally, at a very small cost, and without clashing with their regular duties. I seek for an opportunity of proving this practically. If I succeeded in doing so to the satisfaction of our military rulers, they might extend the system as widely as they pleased, and my classes would have instructed a number of persons who would afterwards be themselves qualified to teach. As yet the matter is a novelty; no one can point to experience and say:—"These things are the best to be taught—this the best way of teaching them—such is the time required for a good practical instruction—such the likelihood of the course being a popular one." But if the experiment be once set on foot, even so short a

* "Art of Travel: or, Shifts and Contrivances available in Wild Countries." By Francis Galton, author of "Explorings in South Africa." Published by Murray, 1855.

period as two months, would go far towards deciding these points, and affording sound ground for future plannings.

The scheme I would suggest, is that of beginning at Aldershott, with classes of Officers who might volunteer to learn,—and I believe that they would volunteer,—and at the same time to offer facilities to others on duty there, to employ a few hours of their leisure time in attending them.

All things that were taught would be practised under the circumstances of a bivouac; that is to say, the Learners would sit on low stools, or on the ground, and work as much as possible without tables or benches, and this, as we all know, requires a very different description of work to that which English mechanics adopt. Every endeavour would be made to give a thoroughly practical, and not a far fetched and fanciful character to the course.

The **MAKESHIFTS AND CONTRIVANCES** would be explained by me in Lectures, aided by Demonstrations and Diagrams, and during frequent Field Excursions. In this division of the course I should follow part of the very same ground as that which I have gone over in the "Art of Travel;" those subjects being omitted which are special to the wants of a private traveller. That book contains on the whole twenty-five chapters; it will, perhaps, suffice to shew my present intention if I mention the subjects treated upon in the first three of them,—they are as follows:—

WATER.—Where to look for water—Signs of its being near at hand—Occasional supplies from rain, dew, &c.—To purify water that is muddy, putrid, or salt—To dig wells without spades, &c.—To water cattle from wells—To make water vessels.

FIRE.—Ways of obtaining a spark—Different kinds of tinder—To kindle a spark into a flame—Different kinds of fuel and their relative value (manure, bones, &c.)—Economy of camp fires.

BIVOUAC.—Where to seek for shelter—Mattresses, blankets, and their substitutes—Different ways of bivouacking when without tents or huts, &c., &c.

The **HANDICRAFTS** would be taught in five or six Classes, all under my superintendence, but each immediately instructed by handy and respectable Workmen.

Their method would be this: each of them would have on view a Collection of such different articles,—or models or pictures of them,—as fall within their several trades, and as soldiers, who are thrown on their own resources, have most frequently occasion to make.

They would in part consist of those very tools and appliances that the Learners are taught to work with, and in part of ingenious and useful makeshifts. They would in all cases be made of precisely that description of rough, strong, and simple workmanship, that I should expect the Learners to become somewhat proficient in. I attach great importance to the judicious selection of these objects, and have prepared lists of them, which I have been long collecting, and would gladly annex; but without sketches and explanatory descriptions it is impossible for me to convey

a just notion of what I mean. I will, therefore, mention a few things only as a sample of my intention; they belong to the Carpenters' Class, and to the simpler kind of works practised in it.

Handles for awls and other tools—Hand saw frame—Stand for grindstone with makeshift crank and treadle—Ladders—Plumbline—Carpenter's square—Wooden drag shoe—Swivel for tether rope—Chair frame (for twisted rush bottoms)—Bedstead frame—Three legged stool—Camp stool—Hanging shelves—Boxes—Pack saddle trees, &c., &c.

(The ways of seasoning wood roughly—of working it by fire for want of tools—All kinds of substitutes for nails, &c., &c., would be shewn.)

The Learners would be set to work, some at one thing in the Collection, some at another; and by comparing and talking over what they severally were employed about they would insensibly become familiar with the details of the whole. They would learn the object and uses of each thing in it, the time required by moderately skilled hands to make them, &c. &c. This would be very valuable and practical knowledge.

The **CLASSES** would be as follows:—

1. Carpentry and Joinering—Taught by a person like a Ship's Carpenter.
 2. Smith's work, both tin and iron.—Taught by an Armourer.
 3. Use of Awl, Sail needle, and Sewing needle.—Taught by a Sailmaker.
 4. Basket Making, Mat, and Palliasse making, &c. &c.
 5. Hutting and Tenting.
 6. Cooking by a good Camp Cook, (his instruction could hardly be given to regular classes.)
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Every day the Learners would have to do the following things, for they require constant practice: 1—Light their own fires from a spark. 2—Cook part of their own meals. 3—Use their awls or needles; and, 4—Square, accurately, a billet of firewood with the axe, or other similar piece of Carpentry.

The materials used would be of the most inexpensive description; they would consist in great part of scraps and refuse, and of billets and faggots,—first worked up, then used as firewood.

In conclusion, I beg to express a sincere hope that the Military Authorities may think fit to countenance the scheme I propose, inasmuch as it aims at a very important result, at the same time that it requires a mere trifle of material support; and, although I have urged the matter only as affecting the soldier, yet if the system were brought into general use, the knowledge of "common things," thus acquired by the Militia man, would not be lost on the population at large.

FRANCIS GALTON.

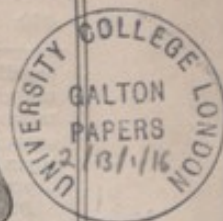
55, VICTORIA STREET, WESTMINSTER,
4th May, 1855.



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THE KNIFE-GRINDER.

I NEVER meet the knife-grinder's equipage, or hear the hoarse dull cry with which its owner announces his presence in the neighbourhood, without the revival of reminiscences partaking both of the rural and the artistic. Of the rural, because, times out of number, I have encountered the knife-grinder on his pilgrimages in high-roads, green lanes, and villages—at the back-doors of country mansions, and at retired dwellings and far-away homesteads, remote from cities and towns: of artistic, because I remember him and his wheel, grindstone and treddle, in a hundred pictures, at least, of the Flemish school, at public-house doors, in riotous fairs; or, as in the famous picture of Teniers, all alone in his glory, filling the whole canvas himself. Whether he is so very ancient, however, as the Dutch artists would make him out to be, I cannot say; but there is a picture by Van Watsnyn, of the exodus from Egypt, in which one of the liberated Goshenites appears in the character of a knife-grinder, sturdily propelling his apparatus towards the Red Sea.

In our towns and villages, the knife-grinder proclaims his advent by bawling, 'Knives gri-i-ind! Razors gri-i-ind!' but in London he rarely puts his lungs to such violent exercise, preferring to advertise his presence by setting his wheel rapidly in motion, and applying to its rough-hewn side the broad blade of a cleaver. The din suddenly raised by this simple means is perfectly astounding; it sets the windows shaking as though a sou'-wester were blowing—rattles the crockery on the dinner-table, and lifts your nervous landlady clean off her seat; but it is too frequent to excite much surprise, and too well known to need any interpretation. If the operations of this wandering professor were conducted with as much skill as he exhibits in making a disturbance, his visits would be more welcome than they are; but, if the truth must be told, there is very little of the craftsman about him; he is a grinder rather than a sharpener of the various kinds of small blades intrusted to his care. If you have a razor with a doubtful edge, he will settle the doubt fast enough by grinding completely off what edge it has; if you offer him a penknife, he cannot conceive that he has done his duty by it until he has ground off three-fourths of its substance; and you will find it to your advantage to limit his services to table-knives, shears, and such larger ware as may require his art. For any shortcomings in the niceties of his profession, however, he atones in some degree by the exercise of various subsidiary callings, for one or other of which, as a housekeeper, you will be sure to have occasional use. Thus you will see

hanging beside his wheel a pot of burning coal, shewing that he adds to the profession of knife-grinder that of tinker; and he is just as ready to administer to the necessities of a leaky sauce-pan, as to those of a notched carving-knife. Then, in a long box, fastened to the frame of his wheel, he has all the means and appliances for the repair, even to the re-boning, of defeated umbrellas, and for the ferruling of walking-sticks; and in the chest of small tools in front of his breast, he has picklocks of all sizes, and can open your bureau if you happen to have lost the key. Besides all this, he will cobble bell-wires, bell-handles, and garden-gates—will fasten a ring to a patten, or a hinge to a clog—or do any other little odd job in a make-shift way, by which he may earn a few coppers, and 'a glass of beer, your honour,' if you choose to give him that into the bargain. The London knife-grinder, it must be observed, is not always, in the common sense of the word, a pedestrian. Frequently he appears mounted on a seat in the rear of a four or three wheeled equipage, which he propels, after the manner of a velocipede, by working a couple of treddles with his feet. This machine is his own manufacture—probably, had it been the production of another, he would have discovered long ere this, what is undoubtedly the fact, that it costs him just as much labour to make his way by stepping perpendicularly as horizontally.

It is a complaint among knife-grinders, that their trade is overdone. This may arise from two causes. In the first place, the occupation is one which serves as a sort of refuge for the destitute; no apprenticeship is required for it, and no more ingenuity than necessity very speedily teaches. A moderate capital will enable an aspirant to commence business, and the returns are forthcoming at once. In the second place, there can be no doubt that a business which promises a continual change of scene—which is controlled by no masters, guilds, or trades-unions, but is gloriously independent of them all, has very enticing charms for a considerable class, in whom the old nomadic instinct is active and strong. These two causes are probably sufficient to explain the alleged superabundance of knife-grinders. It is not to be supposed that there is anything superlatively fascinating in the practice of the art; abstractedly, the tread-wheel in any shape is not a delightful exercise; and the pressing of cold steel against a dripping stone, in the open air, in all weathers, can awaken few pleasurable emotions. No; the man who is a knife-grinder by choice, must be something of a vagabond in his instincts—fond of the romance that is an element of continual change of scene, and impatient of the routine and the restraints of a settled life. Accordingly, we find in many parts of the country, that the knife-

grinding, like the tinkering trade, is in the hands of the gipsies; and we find, too, that they have the reputation, whether justly earned or not, of making it a convenient cover for petty thefts, and the means of spying out the land, as a preliminary to more serious depredations.

In France, the knife-grinder is not known by that name. If you look for him in the dictionary, you will find him denominated *Gagne-petit*; which is, in fact, his popular name. He is called *gagne-petit*, or little gains, doubtless because he does not gain much; he is entitled, however, to the designation of *Rémouleur*, which truly means grinder. When the French grinder comes upon the scene, he announces himself with the shrill cry, '*Répassir ciseaux!*'—which is abominable French for 'scissors to grind;' but he says nothing about knives. Whether knives in France are ever ground, I do not pretend to say; but that, as a general rule, they do not cut, I am bound to affirm. I remember the time when Paris could boast a goodly number of grinders—when the shrill notes '*Répassir—ciseaux!*' were to be heard daily, and at an early hour of the day especially, along the quays and markets, and in the quiet and fashionable quarters of the Marais and St Germain at a later hour. The trade was exclusively in the hands of immigrants from the southern provinces of France, who spoke a miserable patois, hard to be understood by the Parisian, and totally unintelligible to a stranger. They were, however, well-meaning, simple-hearted fellows, free from the vices of the metropolis, and inured to a life of the severest abstinence and self-denial. The grinders of Paris, though not yet extinct, have considerably diminished in number. They have been driven to adopt some other occupation, in consequence of the cutlers appointing each a certain day in the week for grinding—notifying the same by a placard in their shop-windows. Any of my readers who search the municipal archives of Paris, will find a little history recorded concerning one of them who had driven his grindstone through the streets and suburbs of the city for more than fifteen years; which I see no reason why I should not reproduce here. It runs to the following effect:—

Antoine Bonafoux was a grinder, living frugally upon the produce of his precarious industry. Upon the same lofty floor of the house in which he lodged, dwelt a poor widow of the name of Drouillant, who had once seen better days. The death of her husband had deprived her of her resources, and driven her to a garret, where, with an only child—a boy too young to labour—she worked early and late at her needle for the means of subsistence. Bonafoux, whose instinct led him to comprehend and sympathise with her misfortunes, if he passed her on the stairs, would manifest his respect by a low bow, and his sympathy by a courteous inquiry after the little boy; though he sought no further acquaintance. But the widow grew too feeble to work, and seeing her suffering from want, he called on her one morning, and insisted on her borrowing a portion of his savings, alleging that he had a sum in the bank to which he was constantly adding something, and that he could well spare it. The brave fellow knew well enough that he was depositing his earnings in a sinking-fund; but it was not for him to stand by and see a poor lady and a mother pining for assistance which he could render. So she became his pensioner, with the understanding that she was to repay him when she could. Suddenly, during the absence of the grinder, a stroke of apoplexy prostrated the poor widow. The whole house was in alarm; the doctor was sent for; and as soon as he had administered to her present wants, arrangements were made for carrying her to the hospital—that ante-chamber of the tomb to the unfortunate poor of Paris. At this moment Bonafoux came in. 'Stop,' said he, 'that lady must not go to the hospital; I know her better than you do;

it would kill her to take her there. Doctor, attend to her here, and do your utmost; I will defray your charges.' The poor lady recovered slowly under the careful nursing which the grinder procured for her; but was never able to resume her needle-work. Bonafoux supplied all her wants. When the boy grew old enough, he apprenticed him to a stove-maker, and cut up his own garments, to provide him with an outfit. A second attack of apoplexy deprived the poor mother of the use of her limbs. The grinder continued his benefactions to the last hour of her life—nor relaxed his guardianship of her son until he was able to earn his own maintenance. It was for this act of truly Christian charity, extending over a long period, that the French Academy, in 1821, awarded to Antoine Bonafoux a gold medal and a prize of 400 francs. The historian who records the deed, declares that the grinder was worthy of the honour, and, in addition to that, of the esteem of all good men; a judgment in which the reader will probably concur.

Another story in which the French grinder is concerned, was told me some years ago by the son of the person chiefly implicated. It was in these terms: My father was a surgeon in the English army, under the Duke, and served in the beginning of the Peninsular war. At one of the skirmishes near Salamanca, he was out seeking for wounded, and was taken prisoner. With two others, he was put on horseback, and, under charge of an escort, marched into France. Towards evening on the third day after crossing the Pyrenees, he managed to give his guardians the slip, and hid himself in a wood. There he waited till the hue-and-cry was over, and till night grew dark. With the stars only for guidance, he travelled all night, concealing himself again in a wood when day dawned. Covering himself with leaves and branches, he lay down to rest, and slept soundly for several hours. Noon had gone by, when he was awoken by the heat of the sun's rays. On looking round him, he perceived that he had made his lair close to a footpath which wound through the forest; and in the distance he could see, through the brambles, a grinder approaching with his wheel. He lay still, expecting the man to pass; but the fellow stopped under a tree, gathered a few dry sticks, and made a fire, put on a pot to boil, dropped sundry savoury ingredients into it, and fed the flame at intervals with fuel. While the soup was preparing, he busied himself with some repairs to his machine—now soldering with a hot iron—now driving a nail or two with a hammer. My father had eaten nothing since the day before at noon, and was never in his life good at starving or cheating his stomach. When the savoury fumes of the soup were borne to him by the wind, it was as much as he could possibly do to remain quietly in his covert; but when he saw the fellow produce a huge hunch of bread, cut it into strips, begin sopping them in the soup, pour the latter into a tin bowl, and apply himself to spooning out the succulent morsels—flesh and blood could endure it no longer. With a terrific shout, he bounced from his lair, seized the soldering-iron with one hand, grasped the affrighted grinder by the throat with the other, and laid him sprawling. The poor man begged for mercy.

'My good fellow, I don't want to rob you,' said my father—who 'compassionated his wild terror'—'but I must share your dinner.' My father spoke French fluently, but he brought about a clearer understanding of the subject by the display of a few coins. The dinner was shared on the communistic principle, and having dined, the two strangers soon became good friends. The grinder knew well enough whom he had fallen in with; he had heard the story of the prisoner's escape, and expressed his conviction that he would be taken again, as the whole country would be on the look-out for him. This was far from a consolatory



prospect for my poor papa, who had six of us waiting for him at home. But he took heart, and resolved to defeat his pursuers, if possible. He began to draw out the grinder, with a view to make the best use of any information he could get. He learned that the man was not known in the neighbourhood; that he was travelling from Auvergne towards Brittany; and could maintain himself well on the road by his trade. My father's plan was soon formed.

'Now, Monsieur Jacques,' said he, 'you must sell me your grindstone and traps, and teach me how to use them. You must let me have your blouse and cap, and wooden shoes and etceteras; and I must be the grinder who is going to Brittany, and you must get back to the Cantal how you can.' Jacques laughed at this as the maddest proposition that could be thought of; but finding that it was perfectly serious, endeavoured to dissuade his new friend from an attempt promising nothing but defeat and disgrace. But my father would not be deterred from the enterprise; and the grinder at length agreed, for ten guineas, to dispose of his equipage, and indoctrinate the purchaser in its use. That evening he went off to the nearest town, leaving his kit in my father's care, and bought new clothing for himself, together with a stock of provisions enough for several days for the escaped prisoner. The next morning, after a few lessons in the art of grinding to one who had been too well used to the mechanical arts to need much teaching, Jacques set my father forward on his route. Before parting, he shewed him a secret cavity in one of the solid legs of his machine, from which he took a few francs, the produce of his savings, and recommended him to make it the depository of his remaining gold, as a safe place of concealment, should he meet with robbers.

It was thus as a grinder that my father perambulated the heart of France. He made as little use of his tongue as possible on his route, but was obliged to labour for his subsistence, as he dared not incur suspicion by changing English gold. The passport of honest Jacques stood him in good stead, and he luckily escaped questioning. On approaching the coast of the Channel, he made for a town where he knew that English officers were at liberty on parole, and was so fortunate as to fall in with a lieutenant in the navy, with whom, but a few years before, he had entered the Tagus.

In spite of the watchfulness of Napoleon's police, and of the severity of his decrees wherever the English were concerned, there were men to be met with along the coast, who, for a sufficient consideration, were always ready to incur the risk of aiding the escape of a prisoner, or assisting in any other exploit by which a round sum was to be made. To an adventurer of this class the lieutenant introduced my father. The man was a smuggler by profession, and it mattered little to him whether he smuggled English goods into his country, or an English gentleman out of it. He agreed, for a hundred guineas, to put my father either on board of a British man-of-war, or on shore on the English coast, within a few weeks. When the bargain was struck, my father, who was by this time sick of his lumbering machine, wheeled it, by the smuggler's advice, into a deep pond, and took to a comfortable hiding-place in a cavern high up in a cliff that overlooked the sea. It was fortunate he did so. He was hardly safe in his retreat when his pursuers, who had contrived to extract a confession out of honest Jacques, tracked him to the town, and commenced a rigorous search for the pretended grinder. Had they found the machine, they would have known that the owner was not far off; but deceived by false intelligence from the scouts of the smuggler, they started off again on a wrong track, and left the coast clear. For five weeks, my father sat brooding alone in his eyrie; his sole employment, watching for the desired signal by day, and drawing

up provisions in a basket at midnight. The signal gladdened his eyes at last in the early dawn of morning. He uncoiled his rope—slid down by it—stepped on board the smuggler's boat—mounted a fast-sailing cutter in the offing—and in less than forty-eight hours stood safe on his native soil. He had a tenderness for vagabond knife-grinders to the last day of his life, and would give them a job whenever they came in his way.

With this veritable history I may close my account of the knife-grinder. Were I disposed to pursue the subject further, I might recall to the recollection of the reader that well-known German vagabond of a grinder whose boast it was—

Ich schleife die Scheeren und drehe geschwind,
Und hänge mein Mäntelchen nach dem Wind;

who prated so glibly of his independence and his generosity, and illustrated both by swindling poor Hans out of his fat goose: I might speculate on the antecedents of the knife-grinders of the metropolis, and weigh probabilities with regard to those ingenious lads dimly pointed at in the *Vicar of Wakefield*, who are supposed to bind themselves apprentice to turn a cutler's wheel for seven years; and might exhaust a deal of valuable conjecture as to whether, at the end of that time, they were quite qualified for knife-grinders: and lastly, I might point to the 'Needy Knife-grinder' of Canning, whose 'hat had a hole in it—so had his breeches'; who had a taste for beer, but none for politics; and who was denounced and kicked by the 'friend of humanity,' as a 'sordid, unfeeling reprobate, degraded, spiritless outcast,' because he was insensible to the misery of his lot. But these things the reader knows already, and I need not dwell upon them. Let the knife-grinder, then, pass on; and let us listen in silence, and not without some good-will, to his cry—'Knives gri-i-nd! Knives gri-i-nd!'

THE GREAT CARRAC.

ONE of the most important events recorded in the earlier naval annals of England, is the capture of a large Portuguese ship, named the *Madre del Dios*, but better known to our ancestors by the more familiar appellation of the Great Carrac.* We use the word important advisedly, though, as a feat of arms, a distinguished demonstration of nautical skill and indomitable valour, the capture of this vessel was merely one among the long series of naval victories that, from an early period, had attended the auspicious fortunes of the British flag. From the time of King Alfred, the English had ever claimed the supremacy of, at least, the narrow seas; and the defeat and destruction of the Spanish Armada, just four years previous to the period of which we write, proved to the world that the claim could be well substantiated. The importance of this capture may, however, be more readily recognised in another point of view, when we state that it opened up to the nation an entirely new branch of commerce, and directly led to the establishment of the first East India Company. The valuable productions of the East were at that time almost unknown in England, a few only finding their way hither by the two ships that once a year voyaged from London to the Mediterranean. The carrac, the largest and richest prize that had ever been brought to England, first exhibited the rich treasures of the East to the wondering and greedy eyes of Englishmen, and stimulated the commencement of that direct traffic with India which has since formed so important a feature in British commercial enterprise and political power. Quaint old Hakluyt, alluding to the carrac, says: 'She first discovered those secret trades and

* Portuguese, Carraca.

Indian riches which hitherto lay strangely hidden and cunningly concealed from us; whereof there was, among some few of us, some small and imperfect glimpse only, which now is turned into the broad light of perfect knowledge.'

Connected with great historical names, followed by remarkable results, and exhibiting a picture of our early naval adventurers—of ideas and practices so different from those of the present period—the story of the Great Carrac—an important though forgotten episode in the annals of Queen Elizabeth, is not without its peculiar interest—we may say its moral. The history of the past has been compared to a lofty and spacious gallery, the walls of which are embellished with splendid life-size pictures, representing virtuous actions and heroic achievements, while its floor is covered with the vile corruption and repulsive remains of the noisome charnel-house. From the paintings, we should derive a stronger impulse to honourable exertion; from the rotten bones of the charnel-house, a more decided repugnance to their still existing representatives.

The expedition which ultimately led to the capture of the carrac, though designed for a very different purpose, was planned by the chivalrous but unfortunate Sir Walter Raleigh. Its original object was to intercept the silver ships belonging to the king of Spain, on their homeward passage from Mexico, and to plunder Panama by a spirited land movement across the narrow isthmus which separates, as well as joins, the two Americas. It was got up on a principle somewhat similar to the joint-stock companies of the present day. Raleigh embarked his whole fortune in it; Sir John Hawkins, and several merchants of London, joined in the adventure; Queen Elizabeth herself became what we would now-a-days term a shareholder, supplying two ships with L.1500, and granting the authority of her Royal Commission. To use a modern phrase, the stock of the company consisted, in all, of 5005 tons of shipping, and L.18,000.

The fleet, under the command of Raleigh, was fully equipped, and ready to sail in the February of 1592; but a long series of westerly winds confined the ships in Plymouth Harbour till the greater part of their provisions were consumed. The necessity for procuring fresh supplies brought on further delays, so that the May-day merry-makings had passed and gone ere Raleigh, distressed and disgusted by the loss of so much valuable time, was enabled to put to sea.

He was destined to experience a still severer trial. The very day after the expedition sailed, it was overtaken by Sir Martin Frobisher, bearing the queen's orders to Raleigh, desiring him to give up the command, and return immediately to England. Eager to distinguish himself, and trusting to return with a success that would excuse his breach of duty, Sir Walter refused to comply with the queen's commands, alleging, as a palliation of his disobedience, that the mariners had no confidence in any other leader.

The cause of Raleigh's disgrace and recall was one of the principal events in his romantic life. The queen had discovered, when it could be no longer concealed, his marriage with Miss Throckmorton, one of the maids of honour. Elizabeth was highly incensed at the weakness of her attendant, and the boldness of Raleigh in presuming to fall in love and marry without the royal consent; for she ever insisted that the whole admiration of her courtiers should be concentrated on herself; and if any lady of her court, or officer of her household, dared to infringe upon this regal monopoly of gallantry, the consequence was her most severe displeasure. It is pleasing to have to relate, that whatever indiscretion Miss Throckmorton may have been guilty of, by her private marriage, it was fully atoned for in after-life. In all her husband's misfortunes, she was ever an attached and devoted wife, and he always regarded her with the most

implicit confidence and respect. In short, she was a woman eminently fitted, by her virtues and abilities, to be the partner of the unfortunate courtier, soldier, and scholar—Sir Walter Raleigh.

The expedition continued on its course, and in the mouth of the Channel met a French ship returning from Spain to Calais. On board this vessel there was one Davies, an Englishman, who had escaped from 'a long and miserable captivity' in Spain. From this person, and the captain of the French ship, Raleigh learned that delay had been fatal to the object of the expedition. The king of Spain hearing of it, had sent orders to America, forbidding the treasure-ships to sail that year. Notwithstanding this intelligence, Raleigh proceeded till off Cape Finisterre, when, considering the season too far advanced for the attack on Panama, he divided his fleet into two squadrons, one of which, under the command of Frobisher, he ordered to cruise off the coast of Spain; the other, under Sir John Burrowes, to cruise off the Western Islands. He then returned to England, and was immediately, with Miss Throckmorton, committed to close confinement in the Tower.

The division commanded by Burrowes consisted of but three ships—the *Foresight*, belonging to the queen; the *Roebeck*, to Raleigh; and the *Dainty*, to Sir J. Hawkins. On reaching the island of Flores, Burrowes found there two small vessels, the *Golden Dragon* and *Prudence*, belonging to one Moore and some merchant adventurers in London. These vessels had arrived, the day previous, 'on an intended purpose to tarry there for purchase,' as plunder was quaintly termed in those days. Burrowes entered into a written agreement with the commanders of these vessels, 'to have, possess, enjoy, and partake of all such prizes as should be taken, jointly or severally' by them or his own ships for a certain period. The day after this 'consortment,' as it was termed, the reports of cannon were heard booming in the offing; and the admiral, putting to sea, discovered a Portuguese vessel chased by an English squadron. The Portuguese captain, finding his flight intercepted by Burrowes, resolved to run his ship on shore, and destroy her, rather than allow her to be captured by the English. He accordingly did so, and then immediately began removing the most valuable part of his cargo. Burrowes, on joining the English squadron that had so unexpectedly made its appearance, found it to consist of five ships belonging to Clifford, Earl of Cumberland, and engaged, like himself, in the pursuit of *purchase*.

It does not appear very clearly that we were actually at war with Portugal at that period. Indeed, Elizabeth was then anxious to enter into an alliance with that nation, to aid her against her great enemy—Spain; but in the olden time it frequently happened that nations were at war in one part of the world, while at peace in another—at war on the sea, while at peace on the land. The pope, in the plenitude of his power, having divided the world, presenting India to Portugal, and America to Spain, those nations claimed the privilege of capturing the vessels of any other powers that presumed to pass certain very badly-defined boundaries; and the ships of the other powers, naturally enough, retaliated by capturing Spanish and Portuguese vessels wherever they met with them. The great and sudden development of English maritime enterprise in the reign of Elizabeth, may be partly ascribed to this state of continual warfare with Spain and Portugal on the ocean. The high nobility, who, in that semi-feudal age, still ruffled with troops of retainers, did not disdain to engage in this system of legalised piracy, and found a profitable employment for their needy followers, by sending them out to capture the rich treasure-ships returning from India and America. Drake, Frobisher, and almost all our early naval heroes, started in life as the retainers of some adventurous noble. Clifford, Earl

of Cumberland, was the most celebrated of the latter class. He commanded his own ships at the defeat of the Armada, and distinguished himself so greatly, that Elizabeth ever after termed him her captain.

The Portuguese, landing his cargo before their very eyes, was no doubt a galling sight to the English adventurers, but a rising gale prevented them from approaching the land. The next morning, however, the wind having fallen, they sent in their boats well manned and armed, but were again disappointed, the Portuguese having set his vessel on fire. The English boats were, consequently, compelled to return to their vessels without acquiring plunder, but they made two prisoners, Dutchmen, who had served as gunners on board the Portuguese ship. The prisoners would give no information, until threatened with torture; they then acknowledged that the burning vessel was the *Santa Cruz*, a richly laden Indiaman, and that her consort, the *Madre del Dios*, a much larger and richer ship, might be daily expected in the same track.

On receiving this important intelligence, Lord Cumberland's captains agreed to unite their forces with Burrowes, and endeavour to capture the *Madre del Dios*. The ships, under the command of Burrowes, being now ten in number, he stationed them two leagues apart, covering upwards of a degree of longitude, so as to insure the greatest range of vision, and impatiently waited for the expected prize. He did not wait long. At daylight, on the 3d of August, the captain of the *Dainty* espied the wished-for carrac, and immediately bore down towards her. The carrac was the largest ship of the period, and from the description given of her, must have resembled a Chinese junk more than any other existing specimen of naval architecture. She was 1600 tons burden, drew 31 feet of water, had seven decks, and carried 800 men, besides a large number of passengers returning to Portugal, enriched with the treasures of the East. Notwithstanding the immense disproportion in size and force, the *Dainty*, at ten o'clock in the forenoon, began, single-handed, to engage her formidable adversary, but sustained severe damage and loss in the unequal contest. The *Roebuck* next came into action, and was soon afterwards supported by the *Golden Dragon*; but the carrac, making a running-fight, ably defended herself. As the day wore on, the combat continued, the carrac, from her great size, armament, and number of men, keeping her enemies at bay. Towards evening, Captain Cross, in the *Foresight*, came up. Burrowes, who was in the *Roebuck*, hailed Cross, asking what was best to be done. 'We must lay her aboard,' Cross replied, 'or she shall escape to the land, and we will lose her like the *Santa Cruz*.' Acting upon this advice, the English ships closed to board the enemy; but in the manoeuvre, the *Roebuck* and *Dainty* fell foul of each other, the *Dainty's* mainmast was shot away, and the *Roebuck* received a shot between wind and water which caused her to leak so fast that all hands had to be called to the pumps. The *Foresight* was now the only undisabled English ship engaged with the carrac. It was seven o'clock in the evening; the carrac was fast approaching the land, and Cumberland's ships were still far from the scene of action. In this emergency, Cross adopted the desperate expedient of laying his ship athwart the bows of his immense enemy. Succeeding in this bold attempt, he lashed the carrac's bowsprit to the mainmast of the *Foresight*, and withdrawing his men into their close quarters, kept up the engagement with small-arms for the space of three hours. The carrac's way through the water being completely deadened by the *Foresight* lying across her bows, gave time for two of Cumberland's ships to come up; and at ten at night the Portuguese was carried by boarding, after a desperate contest of twelve hours.

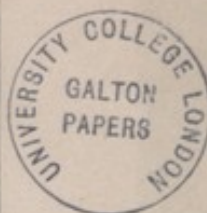
The carrac was now taken, but a scarcely less terrible scene followed the sanguinary horrors of the

combat. As in a town taken by storm, the victors commenced a general pillage of the ill-fated ship and her unfortunate passengers. So eager were they, so recklessly did they seek for spoil, that in their infuriated rapacity they madly risked their own lives, and all the wealth they had so hardly contended for. It being night, each man lighted a candle to aid his search. A fight ensuing among some of the plunderers, their candles were thrown down, setting fire to a cabin containing 600 great gun-cartridges; and if it had not been for the presence of mind and active exertions of Captain Cross, the prize and its captors would have been blown into the air. The plunder continued till next morning, when Burrowes' ship having come up, the admiral claimed all pillage in the queen's name. But the Earl of Cumberland's men denied the queen's authority, alleging that they had not fought for the queen, but for their lord, whose retainers they were; and he always allowed them their rightful purchase, which was all the plate, money, and jewels found on the upper decks.

Burrowes, however, succeeded in stopping further pillage, and then turned his attention to the wounded of the enemy, whom he treated with great kindness, compelling his own surgeons to attend upon them. To the Portuguese captain, Don Fernando de Mendoza—a gentleman well stricken in years, well spoken, of good stature, and comely personage, but of hard fortune—his passengers, and crew, Burrowes gave a small vessel to carry them to Portugal, and permitted them to take away their personal effects. The 'hard fortune' of these poor people was not even then over. On their way to Lisbon, they fell in with another English vessel, and were stripped almost naked, losing 900 diamonds and other 'odd ends' that they had managed to take with them from their captured ship. Burrowes made the best of his way to England with his rich prize, and after narrowly escaping shipwreck on the Scilly Islands, arrived at Dartmouth in the month of August.

The bells of England had not rung a merrier peal since the defeat of the Armada, than they did when the news arrived of the carrac's capture. The value of the prize was estimated at fabulous amounts; even Raleigh, who was still a prisoner in the Tower, calculated her to be worth £500,000. Traders of all descriptions flocked to the seaports, and purchased plate, diamonds, rubies, pearls, musk, ambergris, silks, and gold-embroidered stuffs from the fortunate sailors. The queen immediately appointed a commission to take charge of the prize, and issued a proclamation, commanding all plunder to be delivered up to the commissioners in ten days, 'the same, if considered to be lawful pillage, to be returned to the captors.' The commissioners, on arriving at Dartmouth, found the carrac gutted to the lower-deck; and though Portsmouth resembled Bartholomew Fair, not one particle of plunder was delivered up to them. They, however, proceeded to examine witnesses relative to the pillage, but were disgusted by the gross perjuries committed in the evidence. When the commissioners cautioned the witnesses, and pointed out the sinfulness of such conduct, the latter profanely replied, that 'they had rather venture their souls in the hands of a merciful God, by perjury, than their fortunes, gotten with the peril and hazard of their lives, in the hands of unmerciful men.'

A large folio volume of the Lansdowne manuscripts is nearly filled with documents relative to these proceedings. A complete mania seems to have sprung up all over England to possess something that had been taken in the Great Carrac. The most abject letters were written by ladies of the highest rank to the officers and men of the expedition, begging for any trifling article of plunder, but especially mentioning porcelain, then almost unknown in England.



The queen finding the labours of the commissioners utterly fruitless, and also suspecting them of receiving bribes, suffered her love of money to overcome her resentful feelings against Raleigh, and liberated him from the Tower, giving him authority to use the most stringent means to recover the missing plunder. On his arrival at Portsmouth, the sailors surrounded him with shouts of joy and congratulation, but he replied: 'I am still the queen's poor prisoner,' pointing to Blunt, a warden of the Tower, under whose surveillance he still was. Raleigh immediately instituted the most vigorous measures. All coasting-vessels, wagons, and travellers were searched, and letters opened. By these means, a large cross, formed of a single emerald, sixty-one diamonds, and 1400 pearls, with an immense quantity of other valuable property, were reclaimed.

Burrowes' ship was searched, and in the admiral's own cabin were found several large chests filled with damasks, taffetas, and porcelain. The commissioners seized these goods, but Burrowes claimed them on the plea, that he was a 'gentleman of quality, and the queen's admiral, and required them to make presents therewith to his friends.' One of Cumberland's men then stated to the commissioners, that he had secured, as part of his spoil, an agate-hafted dagger, mounted with diamonds and rubies, but that Burrowes had taken it from him, and he trusted that, in equal justice, the admiral would be compelled to give it up. Burrowes complied by producing a common dagger of English manufacture as the one alluded to; and this 'ringing the change,' as a modern swindler would term it, was considered rather a clever and laughable trick of the gallant admiral. The commissioners also reported that Burrowes wore in a ring a large white stone, but, 'though it be hard, and write in glass,' they could not tell if it were a diamond, and so they permitted him to keep it.

Captain Cross, of the *Foresight*, seems to have obtained the greatest share of the plunder—'as much as loaded a small vessel.' The captains of Cumberland's ships had also a large share. Silver basins, shields covered with beaten gold, porcelain, mother-of-pearl spoons, silks, and tapestry were taken from them; but they succeeded in retaining a great number of other valuable articles. The captain of the *Dainty* put into Harwich, assigning as his reason for doing so, that his men were so determined 'to see the bottom of the carrac,' he could not trust them near her. But his real reason was, that Harwich being near London, he had a greater facility of disposing of his spoil. Before officers were sent down to search his vessel, he sold spices to the amount of £1400; and even afterwards, several wagons were seized laden with cinnamon and calicoes, that had been discharged from his ship.

Thomson, the captain of the *Dainty*, considered himself, as he expressed it, to have been very hardly dealt with. The *Dainty's* mainmast being shot away in the engagement, she fell to leeward, and five days elapsed before she could rig a juremast and rejoin the fleet. Then Thomson found, as he stated to the commissioners, that all the money, silk, jewels, apparel, and chains of gold had been divided among the other captains. He complained to Burrowes, who replied that the plunder was over, and proclamation made for the queen, and that he (Burrowes) was for the queen. 'So am I, too, I hope,' said Thomson; 'but is there never a chain of gold or suit of apparel for a man—no porcelain or silk stuffs for a man's wife?'

'I kept something for you,' said the admiral, 'because you were away;' which something was a common sailor's chest, that had been broken up before.

The cargo of the carrac, left after the general plunder, was brought to London, and sold at Leadenhall. The spices, drugs, and dye-stuffs fetched £114,000; the remainder, consisting of silks, calicoes, carpets, and ebony furniture, sold for £27,200—making in all,

£141,200. The grand question then arose—how should this sum be divided among the captors? The Earl of Cumberland claimed it all, on the plea that his ships had made the capture, the *Foresight* being 'as good as taken' by the carrac when they came up. The queen anxiously wished to have the whole, for the purpose, as she stated, of defending England and the Protestant Church against the Catholic king of Spain. But the sagacious Burleigh, her Lord Treasurer, and Sir John Fortescue, the Chancellor of the Exchequer, urged upon her the impolicy of doing so; stating that adventurers, if not treated in a princely manner, would be discouraged from future enterprises. The queen, however, claimed the privilege of dividing the spoil as she thought proper, and finally apportioned it in the following manner:—Cumberland received £18,000; Raleigh, £15,900; Moore, £2000; and the merchant-adventurers of London, £12,000. It does not appear how much Hawkins received, and there were a number of minor claimants, who received small sums, making the amount divided £57,600. The queen retained to herself the lion's share, amounting to £83,600. The unfairness of this distribution gave general dissatisfaction; but Raleigh, the head and planner of the expedition, did not dare to remonstrate. In fact, he purchased his release from the Tower, and renewal of the queen's favour, by his silence. In a letter to Lord Burleigh, now before us, he writes: 'Fourscore thousand pounds is more than ever a man presented her majesty yet. If God has sent it as my ransom, I hope her majesty, of her abundant goodness, will accept it.'

The *Madre del Dios* remained in the harbour of Dartmouth for two years after her capture; the expenses of pumping and taking care of her during that time amounting to £216. The corporation of Dartmouth then offered £200 for her, promising that whatever profits she might gain, would be invested in an hospital for the poor of the town. Whether her stout timbers rotted in the mud of Dartmouth, or were ultimately broken up for firewood, the manuscript records, from which we have gleaned the preceding particulars, are silent. We know that the proposal of the corporation was rejected, and this is the last we can learn of the 'Great Carrac.'

HOW TO SEE THE WORLD.

Among the valuable lessons which travellers teach, is the art of making the best of everything just at the time when most wanted. A traveller, especially in thinly-inhabited or semi-barbarous countries, is perpetually put to his wits to devise a mode of overcoming difficulties. His food fails, his beverage fails, his fuel fails, his clothing fails—his instruments, his arms, his cooking-vessels, his tents, his wagons, his beasts of burden, his guides, his servants, his money, his health—any of these may fail him at a pinch; and it is a part of his duty as a traveller, an almost indispensable condition of his success, to possess a facility of contriving make-shifts, instead of sitting down hopelessly to mourn over something which is lost, or used up, or broken. To catalogue such probable make-shifts, and to supply hints for surmounting difficulties, are the objects of Mr Galton's remarkable volume, lately published.* It is a small book, but is stuffed full of facts; and many of these facts are not only of great value to a traveller, but are worth knowing by those whose travels extend only a little way beyond their own firesides. He treats in succession of water, fire, bivouac, clothes, food, cookery, discipline, defence, hiding-places, boats and rafts, paths, carrying weights, carpentry,

* *The Art of Travel; or, Shifts and Contrivances available in Wild Countries.* By Francis Galton, Author of *Explorations in Tropical South Africa*. With Woodcuts. London: John Murray. 1885.

smith's-work, skins and horns, writing-materials, riding and draught animals, saddles and harness, wagons and vehicles, guns, trapping, fishing, medicines, presents, articles for barter, and mapping implements. It may be interesting to jot down a few curiosities from this budget.

When an exhausted traveller is in want of water, the converging flight of birds, or the converging fresh tracks of animals, may often guide him to a spring or pool: it is about nightfall that desert-birds usually drink, and the thirsty traveller looks out for their course of flight at such a time. If a thirsty man strips, and exposes his person to a shower of rain, his thirst is greatly allayed. If he has nothing to drink but muddy water, let him tie together a good handful of grass in the form of a cone, place the large end of the cone up the stream, and the water will become partially filtered in the act of passing through the grass. If a traveller be short of water-vessels, a canvas-bag, well greased, will hold water for a considerable time.

For striking a light in the bush or the desert, agate is better than flint: it makes a hotter spark. Cigar-fuses are not worth taking: wet spoils them. The crystalline lens of a dead animal's eye has been sometimes used as a burning-glass, wherewith to obtain fire. The ashes of a cigar rubbed into a piece of paper will qualify the paper to serve as tinder. In the absence of wood fuel, dried animal manure makes an excellent substitute. The same may be said of bones: the Falkland Islanders often cook part of the meat of a slaughtered ox by the heat of his own bones; and the Russians, when in Turkey in 1829, were driven to use bones from the cemetery at Adrianople as fuel. In bivouacking for the night, 'the oldest travellers will ever be found to be those who go the most systematically to work in making their sleeping-places dry and warm.' A bush is not a good shelter for a sleeping-man; it may be leafy and close at a yard from the ground, but it lets through the cutting wind lower down. 'A man, as he lies down upon his mother-earth, is but a small low object, and a screen of eighteen inches high will guard him securely from the strength of a storm;' a broad sod, seven feet by two, and turned up on end, will form such a screen. If nothing better offers, 'a European can live through a bitter night, on a sandy plain, without any clothes besides those he has on, if he buries his body pretty deeply in the sand, keeping only his head above ground;' and Mr Moffat speaks of 'the real comfort, even luxury,' which he once found in such a sandy blanket. That sleepers find snow to be a warm bed in a bitter climate, is well known.

Woven cloaks and coverlets admit the wind as through a sieve, unless the texture be close. 'It is in order to make their coverings wind-proof that shepherd lads on the hills in Scotland, when the nights are cold, dip their plaids in water before sitting or lying down in them: the wet swells up the fibres of the plaid, and makes the texture of it perfectly dense and close.' The Highland poachers adopt an odd mode of 'tucking' each other in at night: when on the moor-side on a frosty night, they cut quantities of heather, and strew part of it as a bed on the ground; then all the party lie down, side by side, excepting one man, whose place among the rest is kept vacant for him; his business is to spread plaids upon them as they lie, and to heap up the rest of the heather upon the plaids; this being accomplished, the man wriggles and works himself into the gap that has been left for him in the midst of his comrades. The importance of flannel next the skin cannot be overrated: in the statistics of expeditions, it has been found that men without this comfort sicken and die in greater number than those provided with it. Mr Parkyns, the Abyssinian traveller, adopted a very primitive mode of keeping his apparel dry, at a time when he had no change of suit: he simply took off his

clothes, and sat upon them in a bundle until the rain was over! The following sounds oddly to stay-at-home people:—'There is no denying the fact, though it be not agreeable to confess it, that dirt and grease are great protectors of the skin against inclement weather; and that, therefore, the leader of a party should not be too exacting about the appearance of his less warmly clad followers. Daily washing, if not followed by oiling, must be compensated for by wearing clothes. Take the instance of a dog: he will sleep out under any bush, and thrive there, so long as he is not washed, groomed, and kept clean; but if he be, he must have a kennel to lie in. A savage will never wash unless he can grease himself afterwards—grease takes the place of clothing to him. . . . We can afford to wash, but naked men cannot.'

Nettles make a dish which travellers welcome if other food be scarce; when gathered quite young, and boiled, they are innocuous; and Messrs Huc and Gabet 'were able to enjoy this delightful variety of esculent more than a month.' The young stems of fern, boiled in pure water, 'realise a dish of delicious asparagus.' Old hides and skins, untanned, 'improve all soup, by being mixed with it, or they may be toasted and hammered!' Travellers in thinly inhabited districts are frequently taught by their daily wants to make *jerked* meat, consisting of dried pieces; or *pemmican*, made of meat dried, pounded, and mixed with grease and meal; or *caviare*, consisting of dried fish-roe, or the whole of a fish dried; or dried and pounded eggs. An animal may be boiled in *his own hide*, in default of a caldron or saucepan. Stick four stakes in the ground, and tie the four corners of the hide up to them, leaving the hide hollow or concave in the middle; then cut up your animal into small pieces, and put it into the hollow of the hide, with a sufficiency of water; put in several large very hot stones, and in due time there is your soup and *bouilli*. A kind of haggis may be made in the stomach of an animal: blood, fat, lean, heart, lungs, all the solids cut or torn into small fragments, are put into the stomach, and roasted by being suspended before the fire with a string. We are assured that 'it is a most delicious morsel, even without pepper, salt, or any seasoning.' Mr Galton recommends a traveller, heading a party of natives, to interrupt the monotony of travel by marked days, extra tobacco, sugar, &c.; avoid constant good feeding, but rather have frequent slight fasts to insure occasional good feasts, especially on those great gala-days, when marked stages of the journey have been reached.

The sort of attention paid to women in rude countries is, it must be confessed, nearly akin to that which is paid to useful animals of lower grade. 'Take the wives of a few' of the natives with your party, if you can,' says Mr Galton; 'for they are of very great service, and cause no delay, for the body of a caravan must always travel at a foot's pace, and a woman will endure a long journey nearly as well as a man, and certainly better than a horse or a bullock. They are invaluable in packing up, and in retailing information and hearsay gossip, which will give clues to much of importance that, unassisted, you might miss.' An American chief told Hearne the traveller, that women were made for labour; that one of them can carry or haul as much as two men; and that they are maintained at a trifling expense, for 'as they always stand cook, the very licking of their fingers in scarce times is sufficient for their subsistence.' The 'rights of women' are now being advocated in the self-same continent where these wrongs of women were thus eulogised. The morals of travelling are sometimes rather queer. Mr Galton says: 'On arriving at an encampment, the natives usually run away in fright: if you are hungry, or in any need of what they have, go boldly into their huts, take just what you want, and leave fully adequate payment. It is absurd to be overscrupulous

in these cases.' So think also the Filibustiers in respect to Cuba. In travelling through a hostile neighbourhood, cattle keep guard very well: the habits of bush-life make a traveller, though otherwise sound asleep, start up directly at a very slight rustle of alarm among his cattle. A person riding a journey for his life sleeps most safely—'for he must sometimes sleep,' as Mr Galton assures us—with his horse's head tied short up to his wrist; the horse, if he hears anything, tosses his head, and jerks the rider's arm; while he will seldom be so careless as to tread upon his sleeping master.

A sylvan post-office for the wilds. If you want to leave a letter in a pre-arranged tree, 'clamber up the tree when it is dark to the first large bough, and sitting astride it, cut with a chisel a deep hole right into the substance of the wood, or you may make one by firing a bullet down into it; in this hole the letter, rolled up or folded quite small, is to be pushed, and the bark nailed down over it. No savage would ever dream of looking there for it.' So we should think. If you wish to cross a deep river with your horse, drive or push him in, jump in yourself, seize him by the tail, and let him tow you across: if he turns his head to try and change his course, splash water in his face with your right or left hand, as the case may be, holding on with one hand and splashing with the other, and you will in this way direct him just as you like. Captain Fitzroy's men once, in a difficulty, collected some boughs, wove them into a sort of large basket, covered it with their canvas-tent, puddled the inside with clay, and were out at sea eighteen hours in this fragile substitute for a boat. The following is curious:—'If caught by a gale, recollect that a boat will lie-to and live through almost any weather, if you can make a bundle of a few spare spars, oars, &c., and secure them to the boat's head, so as to float in front of and across the bow; they will act very sensibly as a breakwater, and the boat's head will always be kept to wind.' Water that is slightly frozen may be made to bear a heavy wagon by cutting reeds, strewing them thickly on the ice, and pouring water upon them; the whole by degrees becomes frozen into a solid mass.

Mr Galton's chapter concerning trapping is full of curious information. In relation to the power of animals to scent the approach of man, he says: 'Our own senses do not make us aware of what is disagreeable enough to confess, that the whole species of mankind yields a powerful and wide-spreading emanation that is utterly disgusting and repulsive to every animal in its wild state. It requires some experience to realise this fact: a man must frequently have watched the heads of a herd of far-distant animals tossed up in alarm the moment that they catch his wind. He must have observed the tracks of animals—how, when they crossed his own of the preceding day, the beast that made them has stopped, scrutinised, and shunned it—before he can believe what a Yahoo he is among the brute creation. No cleanliness of the individual seems to diminish this remarkable odour; indeed, the more civilised the man, the more subtle it appears to be. The touch of a gamekeeper scares less than that of the master, and the touch of a negro or bushman less than that of a traveller from Europe.' Were it not for Mr Galton's great experience in this subject, we might have ventured to suggest, that the horror of the animals is perhaps rather moral than sensorial, resulting rather from an instinctive dread of man's power, than from an olfactory sense of man's personal unwelcomeness. The catching of condors and vultures is managed in a singular way. A raw ox-hide is spread upon the ground; one man creeps under it with a string in his hand, while one or two other men are posted in ambush close by; the bird flies down upon a bait placed on the hide, and the man seizes the legs, and binds them tight in the hide, when the poor bird becomes powerless.

Pedestrians, whose feet are apt to blister during long journeys, are thus advised: Rub the feet at going to bed with spirits mixed with tallow dropped from a candle into the palm of the hand; on the following morning no blister will exist, for the spirits seem to possess the healing power, while the tallow serves to keep the skin soft and pliant. 'Ease before elegance'—that is, soap the inside of your stocking before setting out, and break a raw egg into a boot before putting it on. It is impossible to glance over the pages of this book, without being struck with the number and variety of the disasters to which such travellers as Mr Galton are subject, and with the untiring patience exhibited in devising cures and substitutes whenever the disasters arise. If ever travelling can become an 'Art,' then will Mr Galton's little volume serve as a Manual, a Handbook, a Vade-mecum. But it is also full of readable bits for others.

PARIS IN MAY 1855.

PARIS is certainly a most amusing place. Every time we visit it, we find it in a violently new phase. The last time we were there was in September 1848, when, chancing to be at an evening reception of an ex-member of the celebrated Provisional Government, we found the leading subject of conversation to be the announced coming of Louis Napoleon to France, and a doubt whether he would be allowed to enter. Coming back in less than seven years after—but, after all, seven years is a long time in French history—we find this same Louis Napoleon the emperor of France—the almost autocrat of the country; and yet, to all appearance, a more popular ruler than any of the constitutional sovereigns of the last forty years. Paris, then sad and empty, with the dismal marks of intestine war pitting its walls, was now full and gay, all past troubles and damages repaired and forgotten. Most surprising change of all, we now visited it as the city of an intimate ally and friend of England! To what possible new aspects and conditions may it introduce us after another period of seven years!

We arrived at the end of the week in which the Exposition had been opened. Leaving leafless trees and inch-long crops in England, we found laughing summer on the banks of the Seine, the lilac in full blossom, blue skies, fleecy clouds, and an agreeable temperature. Open-air life was already in full current, though, we were told, it had been so for only a few days, for here the season was comparatively late also. All the characteristic features of the place—the lofty white buildings cutting the clear air, the picturesque shops, the multitudes of women and children in the Tuileries gardens, the groups of men seated in front of the cafés, the good-humoured air of the entire population, making it so difficult to understand whence arise the occasional revolutionary violences—each attracted their share of a gratified attention: so passed the first day. At length we were able to give our full care to the prime object of our visit—the superb structure which has been erected in the Champs Elysées, for the exhibition of the products of the industry of all nations.

The *Palais de l'Industrie*, as it is called by an inscription on its own front, is a substantial oblong building, having a double row of windows along each side, and a vaulted roof of glass. The principal entrance is in the centre of the north side, where it adjoins the carriage-way of the Champs Elysées. At the east end, outside, is erected a bronze equestrian statue of the Emperor.

On the south side, connected by a raised gallery over the Cour la Reine, is a much longer, but perfectly plain building, for the show of machines and other articles of a cumbrous nature. At the distance of half a mile to the west, is a third and detached building, for the exhibition of articles in the Fine Arts from all nations. Such are the material arrangements. You pay five francs (4s. 2d.) for admission to the first two buildings, and an equal sum for admission to the third; so that, when you have provided yourself with catalogues, you find that a day in the Exposition costs you the greater part of a pound sterling. On Sundays, if your English feelings can bear the profanity and the *profanum vulgus* together, you may go over the whole for four sous—that is, twopence.

On entering, we found something greatly different from the exciting bewilderment of the Hyde Park Exhibition. The building being not more than half the length, and capable of being taken in at a glance, we lose that poetry of indefinite space which gave such a charm to the Crystal Palace of 1851. The suggestion of the nationalities by flags comes here less prominently before the eye. The central line of large objects, which formed so gallant a row in our own original house of glass, is here comparatively lost in the greater breadth. Finally, and above all, whether from the high price of admission, or from a disposition to wait till the collection is more complete, there was here no crowd, nothing but a mere handful of people mixing with the numerous groups of carpenters and glaziers engaged in fitting up the stands and cases. Hence, you scarcely felt as in a public place at all. One seemed to be merely looking over a piece of work in progress. Perhaps there is a greater and more hopeless want about this Paris exhibition of the industry (and sight-seers) of all nations—that it is not the novel and original scene our Crystal Palace was. Does not every one who saw that wonderful place, acknowledge that there was something about it quite peculiar, and which, no matter under what circumstances of additional splendour, could never in this generation be repeated?

When it is known, however, that articles had, up to 12th May, come from 9237 French, and 8742 foreign expositors, and that a large proportion of these were already placed, it will be understood that the house, far from complete as it was, yet presented such a show as it would take no small time to inspect thoroughly. We could not attempt anything like a critical inspection; but we saw enough to give rise to a few general remarks. Among the French articles, occupying one entire side of the ground-floor, and nearly an equal proportion of the galleries, it seemed to us that the silks of Lyon, the shawls of Nîmes, the porcelain and crystal products, and generally all objects contributing to personal and domestic decoration, were of an excellence unapproached in our country. The silks and velvet stuffs particularly arrested our attention from their extreme richness and beauty. In the laces of Brussels, there was fascination for the entire corps of the representatives of Eve. The English products of this kind did not strike us as remarkable; but there was a most pleasant surprise in finding that the lace-works of various kinds produced under the care of a charitable society in Ireland, were of a degree of merit relatively remarkable, and which might well give encouragement to other societies aiming, in remote situations, at obtaining a lucrative employment for females. In the British department, which was in tolerable completeness, there was an abundant show of every kind of linen, cotton, and woollen stuffs; and it was pleasant, at this distance from home, to recognise such well-known names as Chadwick of Manchester; Kelsall of Rochdale; Lupton of Leeds; Monteth, Crum, of Glasgow; Pease of Darlington; Baxter, Neish, Norrie,

of Dundee; Lees of Galashiels; and Beveridge of Dunfermline—all connected with the respective products of their several districts. Even from Shetland had a Mr Linklater sent some of the peculiar wool-shawls which have of late years been worked by the neat female fingers of that remote archipelago. It were endless to particularise the articles of attire, made and unmade, which England had sent to the World-show. We trust they will speak for themselves before the assembled nations, and help to open the way for that universal freedom of commercial intercourse by which the general interests of humanity may be so much advanced. At the same time, while we smile complacently at the obvious superiority of the Sheffield cutlery, and of English articles of utility generally, over the corresponding products of other nations, and entertain hopes of their making their way over the continent, let us not slight the many proofs given on our part of inferiority to the foreign workers, especially in the decorative arts. The many beautiful articles of furniture, bijouterie, and ornamentation generally, here presented from Belgium, from Austria, and from Berlin, ought to be an instruction and a stimulus to all who aim at even a respectable rank in the production of domestic elegancies.

The exhibition of articles in the Fine Arts, standing, as has been said, at a little distance from the principal building, is a congeries of galleries, in which space is distributed according to the requirements of the various nations. The best collections of France and other countries have been laid under contribution for this grand show; and when the reader is told that there are 5112 articles to be seen, he may have some idea of what a duty the visit will entail upon him. Entering the English Gallery between the busts of two much-esteemed friends, William Fairbairn and Joseph Whitworth, of Manchester—faces of manly worth and genius, which it is always delightful to meet with—we found a vast assemblage of what might equally be called old friends—namely, a large selection of pictures by the Landseers, the Millais, the Macclises, the Wards, and the Noel Patons, which have been most noted in our exhibitions during the last twenty years. One cannot but be satisfied with these works of the English school; yet it becomes apparent that few European countries leave us much to boast of in this department. The French, if we do not greatly mistake, are now painting in a better tone of colouring than they were accustomed to do a few years ago, as well as reaching a higher grade of sentiment. The great distinction that now remains, is the comparatively large size of their pictures, particularly those of a historical or scriptural kind—a consequence of the large spaces in churches and public galleries which they are allowed to cover.

Our peep at the Exposition accomplished, we tore ourselves away with reluctance from Paris, and groaningly plunged back into the murky atmosphere of London. We had had but a saunter amongst the street improvements of the French capital, but saw enough to put us a little out of conceit with our national custom of parliamenting and journalising over every obviously needful thing for twenty years before it can be done. There, a thing is seen to be desirable: the Emperor says the word, and it is done. How done, we cannot tell; but done it is, and then all are gratified. Here, need we say how many parochialisms have to be consulted and gained over? Verily, this atrocious system of centralisation is not without its good results; despotism itself is not quite an unmixed evil. There is often a great need for irresistible power in this world, and when guided by intelligence and good meaning to all, it becomes like a divine work. At present, for instance, it is fully proved amongst us that smoke, that poison and degradation of all our great cities, is a remediable evil: power alone is

wanting to enforce the means of remedy. Were we a pure republic, like America, we should be still worse off in all such respects. However, it is not alone in public matters that the French excel us. Look at the good behaviour of all large crowds of holiday-makers in Paris, in contrast with the brutal intemperance of an excursion-train in England or Scotland. Look at the *trottoirs* of the Rue St Honoré, washed clean every morning, in comparison with the hardened mud-paste of years on the pavements of some similar streets of London. Let us, dear countrymen, learn the first lesson in national self-improvement—that possibly our institutions and manners are not quite that model of all such things which we are but too apt to think them.

CHARLES KINGSLEY AS A LYRIC POET.

Few readers acquainted with the prose-writings of Mr Kingsley can be ignorant of the fact, that he is a true poet. The stream of his prose continually reveals the golden sand of poetry sparkling through it. In his pictures, taken from the many-coloured landscape of life, and in his transcripts of natural scenery, we feel that he has selected with the poet's eye, and painted with the hand of a poetic artist. But it is not as a writer of poetry in prose we purpose speaking of him now, so much as a writer of poems—in fact, as a lyric poet. The *Saint's Tragedy*, which was Mr Kingsley's first literary work, contained great poetic promise, both dramatic and lyric. It evinced a subtle knowledge of human emotion, especially of the mental workings and heart-burnings of humanity, wrestling with the views inculcated by Catholic ascetics. In addition to its dramatic interest and truthful delineation of character, there were scattered throughout it some drops of song, which, minute as they were, seemed to us to mirror the broad, deep nature of a lyric poet, even as the dew-drops reflect the overarching span of the broad, deep sky. In his prose works, Mr Kingsley has also printed several fine lyrics, the beauty and strength of which have been the subject of almost universal remark. *Alton Locke* contains a ballad, *Mary, go and call the Cattle Home*, which is akin in its simplicity to those old Scotch ballads that melt us into tears with their thrilling, wild-wailing music. In *Yeast* appeared the *Rough Rhyme on a Rough Matter*. It is the cry of a poacher's widow, the passionate protest of a broken heart against the game-laws—poured forth to the great silence of midnight as she is sitting near the spot where her husband was killed. It is distinguished by intensity of feeling, and a Dantean distinctness, not frequently met with in the sophistication of modern poetry. Few that have read it will ever forget it. The lyrics we have mentioned are probably all the reader will have seen of Mr Kingsley as a lyric poet: other pieces, however, have appeared in print. The chief of these were published in the *Christian Socialist*, a journal started by the promoters of Working-Men's Associations some few years since, which had but a small circulation and a brief existence. It is from these we select most of our specimens of our author's lyrical genius, although not all of them.

Mr Kingsley is the descendant of a family of fervent Puritans, and the spirit which lived in them still flashes out: the hot, earnest life which beat so impetuously beneath the armour of the Ironsides, still throbs in his writings. For example, here is a lyric worthy to have

been chanted by a company of the Puritan soldiers the night before a battle, and their loftiest feelings might have found in it fitting utterance:—

THE DAY OF THE LORD.

The Day of the Lord is at hand, at hand,
Its storms roll up the sky.
A nation sleeps starving on heaps of gold,
All dreamers toss and sigh.
When the pain is sorest the child is born,
And the day is darkest before the morn
Of the Day of the Lord at hand.

Gather you, gather you, angels of God—
Chivalry, Justice, and Truth;
Come, for the Earth is grown coward and old—
Come down and renew us her youth.
Freedom, Self-sacrifice, Mercy, and Love,
Haste to the battle-field, stoop from above
To the Day of the Lord at hand.

Gather you, gather you, hounds of hell—
Famine, and Plague, and War;
Idleness, Bigotry, Cant, and Misrule,
Gather, and fall in the snare.
Hirelings and Mammonites, Pedants and Knaves,
Crawl to the battle-field—sneak to your graves
In the Day of the Lord at hand.

Who would sit down and sigh for a lost age of gold,
While the Lord of all ages is here?
True hearts will leap up at the trumpet of God,
And those who can suffer, can dare.
Each past age of gold was an iron age too,
And the meekest of saints may find stern work to do
In the Day of the Lord at hand.

Is this not grand writing? The martial swing and the religious soaring of it make the soul rock to its rhythm.

The next quotation will illustrate how perfect is Mr Kingsley's mastery over the lyric as a form of expression, and with what consummate ease he has put a tragedy into three stanzas.

THE THREE FISHERMEN.

Three fishers went sailing out into the West,
Out into the West as the sun went down,
Each thought of the woman who loved him the best,
And the children stood watching them out of the town;
For men must work, and women must weep,
And there's little to earn, and many to keep,
Though the harbour bar be moaning.

Three wives sat up in the light-house tower,
And trimmed the lamps as the sun went down,
And they looked at the squall, and they looked at the shower,
And the rack it came rolling up ragged and brown!
But men must work, and women must weep,
Though storms be sudden, and waters deep,
And the harbour bar be moaning.

Three corpses lay out on the shining sands
In the morning gleam as the tide went down,
And the women are watching and wringing their hands,
For those who will never come back to the town;
For men must work, and women must weep,
And the sooner it's over, the sooner to sleep—
And good-by to the bar and its moaning.

This is a true ballad. It is clearly conceived, clearly finished, simply worded, and it contains neither metaphor nor conceit. These two lyrics alone will amply shew that their author possesses the fire and force, the cunning art and the beauty of expression, of a lyrical master—in addition to which qualities, his Muse has

at times a wondrous witchery and most subtle grace. Some of his dainty little lilt of song are so full of melody, they sing of themselves, which is the rarest of all lyrical attributes. They remind us of the sweet things done by the old dramatists, when they have dallied with airy fancies in a lyrical mood. Here is one:—

SONG.

There sits a bird on every tree,
With a heigh-ho!
There sits a bird on every tree,
Sings to his love as I to thee;
With a heigh-ho, and a heigh-ho!
Young maids must marry.

There blooms a flower on every bough,
With a heigh-ho!
There blooms a flower on every bough,
Its gay leaves kiss—I'll shew you how:
With a heigh-ho, and a heigh-ho!
Young maids must marry.

The sun's a groom, the earth's a bride,
With a heigh-ho!
The sun's a groom, the earth's a bride,
The earth shall pass—but love abide,
With a heigh-ho, and a heigh-ho!
Young maids must marry.

We conclude our quotations with a brief strain of pathetic minor music, so like the tenderness of some Scottish music, which must have been struck out of the strong national heart, like waters out of the smitten rock, through rent and fissure. These eight lines bring out another quality of the lyric poet—that of suggestiveness—the power to convey a double meaning—to make a sigh or a sob speak more than words—to hint more than can be uttered—to express the inexpressible by veiling the mortal features, as did the old Greek artist:

The merry, merry lark was up and singing,
And the hare was out and feeding on the lea,
And the merry, merry bells below were ringing,
When my child's laugh rang through me.
Now the hare is snared and dead beside the snow-yard,
And the lark beside the dreary winter sea,
And my baby in his cradle in the church-yard,
Waiteth there until the bells bring me.

If these specimens are not sufficient to prove that a powerful lyricist is among us, we do not know what evidence would be necessary. 'Tell Mr Kingsley to leave novels, and write nothing but lyrics,' said one of our greatest living writers to us the other day, when we shewed him some of these songs. Often has the distinguished Chevalier Bunsen, in speaking of the song-literature of Germany and its influence on the people, urged Mr Kingsley to devote his powers to becoming a Poet for the People, and a writer of songs to be sung by them. England has no Burns, no Béranger, not even a Moore: she waits for her national lyricist. Although not as yet, perhaps, thoroughly tried, we know no man who appears to be so fittingly endowed to ascend into this sphere of song, that is dark and silent, awaiting his advent, as Mr Kingsley. He is an intense man, large in heart and brain, a passionate worshipper of truth and beauty. His heart has a twin-pulse beating with that of the people; his song has a direct heart-homeliness, and is that of a singer born. The verses we have given, be it remembered, do not constitute the choicest picked from a larger quantity: they are the most of what we have seen, and are taken as they came. We claim for them the rare merit of originality: there is no echo of an imitation, no reverberation of an echo. The melody has a bird-like spontaneity. It will be found that each repetition serves to increase their beauty.

Observe, too, how essential everything is that belongs to them: there is nothing accidental. Mr Kingsley has the self-denial to reject all that is superfluous in thought or word, which is a most rare virtue in a young poet, and without which no one can ever become a writer of national songs. He has also acquired the young writer's last attained grace—simplicity. Many of our young writers seek to clothe their thoughts all in purple words, thinking thus to become poets. A man might just as well think of becoming king by putting on the royal purple.

KARL HARTMANN:

A STORY OF THE CRIMEA.

IN FOUR CHAPTERS.—CHAP. II.

THE *Saucy Gipsy* got away in first-rate style: she was evidently a racer; and Joel Brystone, the skipper, was one of the most skilful and experienced seamen of New York. The voyage had at any rate commenced auspiciously. After patrolling the deck in a state of misty excitement, which for two or three hours neutralised emotions of another kind, I was observed by Captain Brystone to catch wildly at the mizzen-ratlines, the region about my lips assuming at the same moment a hue of yellowish-white; whereupon I was forthwith handed below, and laid out in my sleeping-berth. I don't think my sighs and groans ran much upon dear Ruth during the following six or seven days and nights, but her image returned in undiminished lustre and freshness with the restoration of my mental and bodily faculties, and I silently pledged her over and over again in joyous bumpers, after the very first dinner I sat down to at sea. By that time, we had made the Atlas Mountains on the Morocco coast; and the wind continuing favourable, the *Saucy Gipsy* was soon slipping through the Straits of Gibraltar, towards the Mediterranean, where we at once became intermingled with the tide of war sweeping eastward to drive back the legions of the czar. Specimens of the whole art and range of ship-craft—from the swift, stupendous screw line-of-battle-ship to the slight and sluggish sailing transport—passed or was passed by the *Saucy Gipsy* during the remainder of the voyage, all full of red and blue soldiers, or freighted with the dumb and equally indispensable instruments of mortal conflict; the red cross and tri-color floating proudly from the mastheads; the national airs of France and England resounding from the crowded decks of the coalesced armadas.

'What think you, Mr Hartmann,' said I, early one morning, as we were both intently watching the huge *Himalaya* sweep past with the Scots Greys on board, their band playing *Partant pour la Syrie*, in complimentary recognition of *God save the Queen*, indifferently performed by the amateur musicians of a French mail-boat from Malta—'what think you of the stability of this, but a few years since, impossible alliance of the two great Western nations? According to some of the more solemn and second-sighted of the quidnuncs on our side the Atlantic, it amounts to a redistribution of the forces of Europe, not only subversive of the balance of power in the Old, but full of menace to the peace of the New World.'

'It is an alliance,' replied Hartmann, 'dictated by the awakened common sense and the permanent interests of the two nations, and depending for permanence, therefore, neither upon princes nor parchments. As to its menacing America, that is all bosh! unless, indeed, the United States should be conceit-crazed enough to challenge civilised Europe to mortal combat in defence of sacred slavery; as the Muscovite has in vindication of red-handed violence and the precepts of Christianity: then, indeed— But I eschew prophecy.'

'As to conceit,' chimed in Captain Brystone, who was standing close by, 'I'll back the Britishers against all creation for that; and yet, with all their prancing and trumpeting about this war, they are setting about it, according to their own newspapers, like a parcel of old women, rather than men of sense and pluck.'

'There is a tinge of truth in that,' said Hartmann; 'but as, no doubt, your sagacity will have already suggested, military departmental deficiencies—the cankers of a long peace—will find a sharp and sure remedy in the experience of actual war.'

'That "long-peace" excuse,' persisted Brystone, 'won't do at any price; or how is it we never hear of such bungling mismanagement in the French and Russian services?'

'Because, my dear sir, they hold by the Napoleonic maxim—*qu'il faut laisser son linge sale chez soi*; a rule there is much to be said in favour of. Still, I prefer, on the whole, unfettered, independent criticism, frequently savage and unjust as it may be towards individuals. Sir John Moore is a notable instance in point—the most furiously abused, and one of the ablest generals England ever sent forth. But it is time to see about breakfast, I think.'

'That's a feller, now,' remarked the captain, as Hartmann disappeared below, 'that would take some time to correctly post up. I agree with you, however, Master Henderson, that he is a Britisher, hail from wherever he may.'

We were becalmed for nearly a week in the Mediterranean, save for a brief land-puff now and then; and the days being intensely hot, Hartmann and I, the only idlers on board, used to take our deck-exercise after sunset, he often reading scenes of plays, or snatches of poetry aloud, the brilliance of the night enabling him to read the smallest print with ease. Suddenly breaking in one evening upon his favourite pastime, I said: 'What sort of a man is the Arthur Dalzell said to be dying at San Francisco?'

'What sort of a man is the Arthur Dalzell said to be dying at San Francisco,' quietly replied Hartmann, folding down the page he had been reading, and closing the book: 'well, in person, well-looking enough, and about my own height and age; in character and disposition, a mingled yarn of good and evil—the evil, as I think, greatly predominating.'

'Come, that's candid, at all events.'

'You must think so, believing as you do that I am Arthur Dalzell.'

'Ha! How did you infer that?'

The man smiled, and taking me in a patronising way by the arm, said: 'My young friend—for a friend I am determined to make of you—that ingenuous face of yours can be read by duller eyes than those of Ruth Garstone. Nay, don't be foolish! You naturally wish to know something of your Aunt Viola's husband—Arthur Dalzell. Here, then, in a few rough strokes, is the man's moral picture in little:—Dalzell is a soldier, daring by temperament, a generous fellow too, from the same prompting. He is not thought to be a hard or cruel man—certainly, he would not strike a woman or a child; yet he has abandoned his wife and daughter for years, in order that he might be more free to follow the adventurous, vagabond life he loves. Altogether, he is a man of ardent impulses, not without some pleasant, perhaps good qualities, but utterly destitute of governing principle. Nay, I verily believe,' continued Hartmann with strange vehemence, 'that although he does love, always has loved his wife—and monster, indeed, must he be, did he not love that gentle long-suffering woman—yet, I say, I verily believe that there mingles with his fervent longing for reconciliation a base hope, that in the event of his at least possible recovery, he may revel once more in riches by participation in the large sum which, by the death-bed remorse of the man by whom her husband was

ruined in the matter of some government contracts, has lately devolved to Mrs Dalzell.'

'Did you inform Mrs Garstone of the legacy you speak of?'

'Yes, but she seemed not to heed the information, although the bequest is comparatively a large one: silver rubles amounting to nearly five thousand pounds of your money.'

'And you are not sure that the vicious maniac you describe is really dying after all?'

'Well, yes, I think he is. We all are, for that matter; but with Arthur Dalzell, I cannot doubt that the wine of life draws near the lees. I agree with you also, that he must be at least partially insane.'

We were silent for some minutes, and then I said quickly: 'Am I right in supposing that you are personally known to my aunt, Mrs Dalzell?'

'I know Mrs Dalzell well; and she knows me, much too well: I mean, that her esteem can hardly equal her knowledge of me. Of less consequence, you are aware, inasmuch as any business I may have with her can be transacted by proxy—you being that proxy. And if, by chance, I should find myself in her presence, she, unhappy lady, will not, of course, be cognizant of that fact.'

Our conversation, after this, turned upon indifferent matters, and it was not long before we retired below, and turned in for the night. Nothing of importance occurred till the *Saucy Gipsy* was safely moored in the Golden Horn—not much then. The cargo was speedily disposed of; all matters of business satisfactorily adjusted; and I was ready to address myself seriously to the fulfilment of my good Aunt Martha's chief behest. But no step could, of course, be taken in the absence of Karl Hartmann, who had disappeared the very day we arrived at Constantinople, after making a bold draw upon the funds in my possession, and promising to return in ten days at the very latest. That time expired, and still no Mr Hartmann was to be seen or heard of; and I was becoming ferociously impatient, when a letter was placed in my hands by a clerk in a Greek house. It informed me that—but as the letter is before me, and sufficiently concise, I had better simply copy it:

'YALTA, CRIMEA, August 18, 1854.

MY DEAR SIR—This note will reach you by a sure hand, and will, I trust, decide you upon coming here without delay. I have obtained exact intelligence of (here there is a blotted erasure) your Aunt Dalzell and her daughter, still, as ever, the chosen companion of calamity—Viola, I mean, not Marian—completely blind, I am told; total eclipse—from cataract, it is said. My position here is a peculiar, and rather menacing one, though, after Ingraham's exploit at Smyrna, I should think my certificate of American naturalisation would pull me through. Perhaps not. There are grave circumstances, which I will explain when I see you. By the by, Prince Menschikoff, who commands here, is making tremendous preparations for the prompt carrying out of his proclaimed intention to drive the red and blue devils now at Varna into the sea, should they dare pollute the sacred soil of Russia with their profane footsteps, or hoofsteps; an announcement which, being indorsed by a unanimous and orthodox clergy, is received with undoubting faith by all here; even by the poor Tatars, who, like the devils—not the aforesaid red and blue ones—believe and tremble. There is one infidel exception—your obedient servant,

KARL HARTMANN.

N.B.—The roadstead here is a safe one at this time of the year, and I think the *Saucy Gipsy* might pick up a profitable cargo of morocco leathers and lambskins just now.'

I determined to start at once; and first giving the necessary directions to Captain Brystone, I hurried off

to Pera with my letters of especial introduction to Mr Brown. I found our excellent representative at home, and sufficiently at leisure to listen to a brief exposition of my purpose in visiting the Heracleian Chersonesus.

'A simple affair enough in itself,' he remarked; 'but you should, I think, keep a wary eye upon Master Hartmann's movements. A note I will give you to Prince Menschikoff, with whom, when here, I had something more than an official acquaintance, will enable you to do so effectually.'

I thanked Mr Brown for his kindness, received the all-important note, and sailed the next day for Yalta with a light heart and a spanking breeze.

By this time the steam and sailing vessels required for the transportation of the British and French troops were assembled before Varna—a motley, multitudinous fleet, numbering from 400 to 500 vessels. We passed them on the 4th of September, at about three leagues to windward; for, luckily for that crowded mass of shipping, the wind, half a gale, was blowing off the shore. The embarkation was, we saw, vigorously progressing to the sound of martial music, exuberant cheering, and not unfrequent cannon-fire—in enforcement, no doubt, of the orders signaled by the fluttering bunting of a screw two-decker, bearing a rear-admiral's flag. By sun-down, we had dropped the whole of the vast armament, with the exception of the top spars of the largest men-of-war: these presently disappeared in the gathering gloom, and not a sail was visible in any other quarter save those imaginary ones which landsmen such as I conjure up in the distance out of flashing foam-horses chasing each other over a wild waste of sea.

'Steam,' I remarked to Captain Brystone, as he shut up his glass after a long scrutinising look towards every point of the compass—'steam has, I daresay, greatly increased the facilities for such an enterprise; still, it is quite clear, even to my unskilled judgment, that the gigantic embarkation going on yonder is a terribly hazardous affair.'

'That's a fact, Master Henderson,' rejoined the captain; 'and the boldest Britisher there would think twice of such a venture if the Russian men-of-war, instead of skulking off to hide themselves at Sebastopol, shewed they meant to have a downright shindy with their enemies at sea.'

'You cannot suppose the Muscovites would have a chance with the British fleet in a sea-fight, not to reckon the French!'

'Not the ghost of a chance, in a regular sea-fight, I am quite sure; but that's not what I'm speaking of. I have seen service with a convoy before now; and I tell you, Master Henderson, that let the men-of-war look them up as smartly as they may, that thundering fleet of transports won't have been at sea six hours, before they are a straggling, biggledy-piggledy line, leagues in length and width. Ten or a dozen swift steam-frigates, or half that number of such frisky fellows as the two-decker we saw cutting about yonder, well placed and smartly handled, would find opportunities of dashing in amongst them; scatter death and destruction on all sides, create the wildest confusion, and be off again, especially at night, before the war-ships could interfere to any effectual purpose. Just fancy the heavy metal of a frigate or a two-decker crashing through the brown paper-sides of merchant-vessels chock full of soldiers—transports running into one another to get out of the way—and ask yourself what sort of a plight the army would be in to effect a landing in an enemy's country, after two or three turns at such a game as that!'

Having thus delivered himself, Joel Brystone turned to the mate, and ordered him to call the hands to shorten sail, and make all snug for the night, as a 'sneezer' was evidently coming on. He himself took the wheel. I dived below out of the way, and was

soon, spite of creaking timbers and a roaring sea, in a sound sleep, and dreaming of—

'Precisely.' And that capital guess of yours suggests to me that Ruth Garstone's pretty face was not more changeable in its aspect of smiles and frowns, candour and coquettishness, than is the equally capricious Euxine in passing from wildest fury to gentlest calm. The morning shewed no trace of the previous night's gale, save in the slowly subsiding wave-swell, through which the *Saucy Gipsy*, feebly sustained by a light, fitful breeze, helplessly pitched and rolled. The wind freshened about noon, continued fair; and early the next morning the low flat shore of Kalamita Bay, on the south-west coast of the Crimea, close by the northern horn of which nestles the old Tatar town of Koslov, now Eupatoria, was visible from the deck. It was still far away, however, on our larboard-beam, stretching southward in sinuous outline to Cape Cherson, and backed up by the hill-region of the peninsula, which rising precipitately on the south, reaches inland as far as Simferopol, whence a vast steppe or plain extends in unbroken sterility to Perekop. As the day advanced, Eupatoria and the villages along the coast lit up into clearer distinctness—the hill-tops to the south and east sparkled with sun-fire, and by and by we could discern, through the glass, numbers of country-people busy getting in the harvest, with the help of camels and bullock-carts. Everything betokened peace, quiet, security, utter ignorance, or utter carelessness of the storm of war about to burst upon them. Not a soldier was to be seen, unless some fellows riding about upon ponies, with what to us looked like slender rods, borne in an upright position, or across their saddles, were lance-armed Cossacks. This strange apathy or disdain called forth numerous, and far from complimentary, comments from Joel Brystone, especially after we opened up Sebastopol, and he had counted from the mast-head the numerous fleet skulking idly there. 'A tremendous strong fortress, though, this Sebastopol!' he added, 'as that fellow Hartmann said, and about the only sensible thing he did say: not a place to be taken by the collar even by the Western Colossians.'

'Western Colossi, was it not?'

'Colossi or Colossians,' rejoined the captain, 'it comes to pretty much the same thing, I believe—which is, that the British and Frenchers will find Sebastopol a cussed hard nut to crack.' So saying, and feeling, I could see, a little pouty at having the correctness of his language questioned, the commander of the *Saucy Gipsy* walked away.

The following day, the *Saucy Gipsy* dropped her anchor in Yalta roadstead; and after the brig had been boarded and ransacked by an inferior crew of officials, we were visited by a sort of amphibious officer, inasmuch as, although a seaman by profession, as he told us, he wore a soldier's uniform, and called himself Major Kriloff. A civil sort of person the major proved to be, after satisfying himself of the genuineness of our nationality, and the legitimacy of our purpose in visiting the czar's dominions. That civility grew instantly to graciousness when he was shewn the letter to Prince Menschikoff, with the wax impressed by Mr Brown's official signet. There would, he said, be some difficulty in obtaining an interview with his excellency, who was just then incessantly occupied in marshalling the imperial forces for the signal chastisement of the sacrilegious Allies of the Turk; but every consideration, consistent with the military and police regulations, would meanwhile be shewn to a gentleman officially commended to the prince by the representative of a great, friendly power. 'The delay will not be very long,' added the major; 'for his excellency will quickly finish with the audacious invaders should they, which I think doubtful, be mad enough to set foot upon Russian territory.'

Captain Brystone, who understood French very well, though he did not speak it, gave a sarcastic sniff at hearing this; and I assured the major there was little doubt that the Allies really meant landing in the Crimea, and shortly too.

'So much the better,' he briskly replied: 'they come to their graves!—though not in one sense, for we shall toss them like dead dogs into the sea,' added the gallant officer, tossing down a bumper of champagne emblematically at the same time. 'The French,' continued the major, kindling with the subject, 'the heroic children of the czar chased before them like sheep in 1812; and a very intelligent countryman of yours assures me, that the English soldiers will be panic-stricken at the mere sight of our invincible veterans!'

'A countryman of ours?'

'Yes; that is, a naturalised American, though a German by descent—a most intelligent person, I assure you. He has given me a lively description of your famous battle of New Orleans, where he tells me General Jackson, with only about fourteen hundred American militia, put to rout a whole host—upwards of twenty thousand English regulars—though posted behind walls of cotton bags! He himself was a very young drummer-boy at the time, and helped to beat the advance at the decisive bayonet-charge. His name is Karl Hartmann. Perhaps you know him.'

'Well!' exclaimed Brystone, as soon as he could fetch breath—mine was quite gone—and bringing his fist down upon the table with tremendous force—'well! if that don't bang Barnum, I'll be ——.'

The major, not understanding English, evidently mistook the captain's words and action for a vehement confirmation of Karl Hartmann's bulletin of the battle, for he immediately said: 'I am happy to find you can corroborate my friend's statement. One of the most agreeable, gentlemanlike men I have ever met with is Karl Hartmann, and an ardent admirer of Russia and her glorious emperor. He has been confined to his hotel by a slight indisposition for the last five or six days, or I should have endeavoured to bring him with me; but as you, Mr Henderson, are going on shore with me, I shall have much pleasure in presenting you to each other.'

'Thank you, Major Kriloff, but Mr Hartmann and I are old acquaintances. I shall be very glad to see him, let me add.'

The major was delighted to hear that, and soon afterwards we landed in company on Yalta pier. Yalta is, or was, a favourite resort of the Russian families who during the summer visit the Crimea; and, previous to the entry of the allied fleets into the Black Sea, a steamer plied regularly twice a week between it and Odessa, touching at Sebastopol on its way. The town is partly built upon the plateau and western side of a rather lofty promontory, and runs considerably inland through a charming valley sheltered on each side by wooded heights. Many of the houses are built up the hillside in a kind of step-terrace fashion, the flat roofs of a lower tier forming a promenade to the tier above. The permanent inhabitants are, I believe, chiefly Russians and Greeks, though the Tatar element of the Crimean population—chiefly agriculturists, sullen, swarthy fellows, with high cheek-bones, flat spreading noses, and narrow, long, cunning eyes—were numerous enough about the streets; and now and then a woman of that race shuffled past, her features concealed by white cotton bandages. The main street was full of soldiers, drawn up in heavy marching-order; and of course Major Kriloff was inexhaustibly voluble in his admiration of their fine soldierly appearance—an estimate which, though I did not endorse, I took care not to contradict; and the patriotic monologue terminated only at the door of the principal hotel, where temporarily resided Mr Karl Hartmann, and where the

courteous major left me, after readily promising to return and dine with me and 'ce cher Hartmann,' whose appetite, it appeared, was not in the slightest degree affected by the ailment which confined him within doors.

Karl Hartmann's indisposition, as I suspected, was a mere pretence, except in so far that an unexpected incident had in some slight degree shaken his steel-strung nerves.

'The truth is, my dear Mark,' said he, with an effort at familiar frankness, as soon as we had shaken hands—'for in future there must be no concealments between you and me—that I chanced to meet a fellow the other evening who, I thought, was a thousand miles away. Had he recognised me as I did him, and my revolver had not put in effectual bail for its owner, as I daresay it might have done, I should have been strung up in a trice to the nearest tree; or, had he chanced to be in a very gracious mood, have been despatched to the other world with military honours—*videlicet*, a close volley and a dozen bullets through my head.'

'Nonsense! This must be a reckless, extravagant jest, like your drummer-boy doings at the battle of New Orleans.'

He laughed out, the light merry laugh of a light-hearted merry boy. 'Krilloff has told you of that already, has he? Well, he is one in authority here: it was desirable to win his favour, and I have succeeded in doing so to admiration, by simply humouring his prejudices. But as to the *rencontre* I was speaking of, and its possible consequences, all that is true as doom.'

'What crime, then, have you committed, or been charged with?'

'None whatever! I mean no moral crime—one against the military code only. It thus fell out: You are aware that I once held the czar's commission?'

'No; but I have heard that Dalzell did.'

'I served in the same regiment with Dalzell, and he and I were not only bosom-friends and brother-officers, but, in conjunction with one Basil Ypsilanti, a wealthy Greek, brother-contractors. We were stationed in Bessarabia at the time, and both knowing something of military engineering, we, after much ado, obtained a contract for some extensive works connected with the defences of Ismail. The affair wound up disastrously, Ypsilanti, whose name did not appear in the business, having cheated us outrageously in the purchase of material. This we were as certain of as that we had life and breath, but legal proof thereof was difficult; and one of the consequences was, that General Korkasoff, meeting me one day about a mile outside of Ismail, called me, after asking a few questions, "*un sacré escroc*." He was on horseback, and accompanied by an officer of his staff—the man I met the other evening. I also was on horseback. Now, in my mildest mood I could hardly have tamely borne being called a cheat; but at that moment my brain was in a whirl of fiery excitement from wine and loss by play; and the offensive epithet had scarcely left the general's lips, when I answered it by a fierce stroke across his face with a stout riding-whip, followed by a shower of blows, which, aided by astonishment at the incredible audacity of such an attack, deprived him of all power of resistance. The aid-de-camp was at first equally stupefied and paralysed, but presently rallying his startled senses, he drew his sword, and rode at me, shouting, as he did so, to an infantry picket not far off. I parried his thrust, and returned it by a blow on his head that must have set it ringing for some time, and to divers tunes; then set spurs to my horse, and, being capitally mounted, went off like the wind. I escaped, and found my way to America, where I read in the *Invalide Russe* that, as usual with deserters, I had been tried in my absence by court-martial, and condemned to death, "*mort infamante*," which in the vulgate is *sus. per col.*

You think, no doubt,' he added, 'that I must be crazy to come here under such circumstances; and perhaps it was an act of madness; but something, I thought, might be trusted to the fact, that the corps to which I belonged is now stationed in Poland; to the change produced in my appearance by difference of years, dress, the absence of beard, moustaches, and so on. Besides, the inveterate gamester ever delights in *le grand jeu*, though the stake be his own life.'

'Yes, I can understand that, when the possible gain is in some degree commensurate with the possible loss; but in the present case, you hazard your life for positively nothing—as regards yourself.'

'May be so; but the cards are dealt, and the game must be played out. And now to other and more pressing topics. Gabriel Derjarvin, half-Tatar, half-Russ—Ypslanti's executor and trustee—is, I find, a much greater rascal than I had supposed, and I allowed a wide margin too. He will give us plenty of trouble, if nothing worse. He is now, I believe, at Simferopol; and there or elsewhere we must seek, find, and try conclusions with him. Your aunt, Mrs Dalzell, and her daughter, are lately gone, he tells me, and by his advice, to reside for a time in Sebastopol.'

'Sebastopol! To a place about to be besieged—perhaps stormed!'

'An entirely absurd supposition, my good young man,' replied Hartmann, with an explosion of bitter mirth. 'A grand council of war has been held, at which the programme of the coming campaign has been definitively settled. It runs thus: The Allies are to be permitted to leave the safe security of their ships, to find their presumptuous march arrested before one of the formidable positions in the vicinage of Sebastopol, whence hurled back, discomfited, overthrown, amazed, by the Russian hosts, all those who escape the sword will be drowned in the sea; a modern illustration, according to a printed address, signed by the archimandrite of Odessa, of the catastrophe which in ancient times overtook swine possessed of devils. Of course, the unsavoury similitude offends your British olfactories—well, on the father's side at any rate, if not on the mother's—but it is not the less certain for all that—that dinner is served, and Major Kriloff impatient to fall to. Come along, Master Henderson.'

In the forenoon of the following day, Karl Hartmann, Major Kriloff, and I, set out for Simferopol, Menschikoff's head-quarters, in a *tarantas*—a two-horse vehicle, consisting of a coupé and a box-seat. I was not quite sure whether the major looked upon us as companions or captives—possibly as both; but it was very plain that he did not intend to lose sight of me till the genuineness of the letter to the prince had been verified. He was exceedingly gracious, however; and travelling in the Crimea under his authoritative guidance, was much more expeditious and agreeable than it might have been had we journeyed alone. And a delightful drive it was, through one of the most placidly picturesque regions it is possible to imagine: fertile valleys, shut in with finely wooded heights; one—that of Baidar, some ten miles long by five in width—cultivated like a garden, and waving with luxuriant crops of wheat, rye, millet, tobacco, interspersed with plantations of vine, mulberry, quince, pomegranate, apple trees: mountain table-lands, or plateaux, called *yailas* by the Tatars, rich in summer-pasture, and covered with long-tailed sheep, buffaloes, camels, and horses. The numerous Tatar huts, of lime-washed clay, are for the most part built amidst patches of mulberry, walnut, or other fruit-trees. At that season of the year, green tobacco-leaf was hanging to dry upon rough trellis-work in front of most of them. Upon several of the flat roofs, Tatar girls were winnowing corn; and other industries—turning, for example, with a bow and string—are pursued after a like primitive fashion. The day was splendid, and the sun-lit

panorama of valley, mountain, forest, river, was further enlivened by the glittering arms and accoutrements of numerous bodies of military, horse, and horse-artillery chiefly, galloping past on the direct road, or glancing across a distant opening in the forest—all hurrying westward, to share in the coming triumph of the Russian arms. At Baghtsche-serai, the ancient residence of the Tatar khans, where we slept, or rather should have slept, if permitted by the swarms of fleas, cockroaches, with a sprinkling of scorpions, domiciled hereditarily in the bed-rooms, the same excitement and exultation appeared to pervade the soldiery temporarily halting there; whilst the scowling looks of the Tatar habitants seemed to express a savage hope, controlled by equally savage servile fear. Major Kriloff introduced us to a party of Russian officers, who were all, and quite naturally, brimming over with indignation at the threatened insult to the sacred soil of Russia. Their eager talk and questioning referred not so much to the French, who, in connection with the campaign of 1812, they affected to hold very cheap, as to the English, with whom they had not yet measured swords; and certainly Hartmann fooled them upon the subject to the top of their bent. His precious battle of New Orleans, which always stirred my bile, by the ridiculous version it gave of a really creditable affair, absurdly overpuffed as it may have been by Old Hickory's partisan admirers, was repeated over and over again, with never-ending variations; and by midnight, when the reckoning for champagne—towards which they would not hear of our contributing a cent—must have reached a handsome figure, it was firmly impressed upon every confused brain there that the English of these days, though still formidable at sea, were as inept as Chinese at land-fighting, and would certainly scamper off at the first flash of the Russian bayonets. Hartmann was in his glory, and concluded the evening's entertainment as follows:—

'I think you hinted just now,' said he, confidentially addressing the only Russian officer remaining in the room—and who, it had struck me, was very young looking for his rank—'I think you hinted a short time ago that your uncle, being a general of division, you could have your gallant Arofsky regiment placed in whatever part of the field seemed likely to yield the thickest crop of laurels?'

'I have little doubt I could.'

'In which case,' continued Hartmann, 'I can give you useful counsel: no thanks, my dear Colonel Softenuff, I'—

'Puhmpenuff'—this is no word-play of mine; Puhmpenuff is a well known Russian surname—'Puhmpenuff, if you please, Monsieur Hartmann.'

'Ah, oui, Puhmpenuff—a highly distinguished name, it struck me at first.'

'One of the most distinguished names in the empire,' said Puhmpenuff, stroking his moustache complacently.

'And very deservedly so, I have no doubt,' rejoined Hartmann; 'but, returning to the counsel or advice I have to give you. It must, to begin with, be clear to you that my opinion of the qualities and composition of an English army is entitled to respect; I, who, when a mere boy, assisted—so far as vigorously beating the *pas de charge* can be called assisting—a mere handful, comparatively speaking, of my countrymen to rout and pepper twenty thousand English red-coats, intrenched though they were behind ramparts of cotton-bales.'

'Thirty thousand, you said just now,' remarked the colonel.

'Did I? Well, I daresay there might have been thirty thousand; but the truth is, they ran so fast that it was difficult to ascertain their numbers with more than approximate accuracy. To proceed, however. Although nineteen out of twenty of the British soldiers you will soon be in face of have never in their lives heard a gun fired in anger, and won't stop when they do to hear a

second, there are, you must bear in mind, two or three regiments which, as a matter of prudence, should be avoided. Not—understand me, Colonel Puhmpenuff—that I for a moment believe a soldier of your heroic name and chivalric character cares one straw how brave or how numerous may be the enemies opposed to him; but it is your duty to economise the blood of your valiant Arofskys, prodigal as you may be of your own.'

'Certainement. There I agree with you entirely, Monsieur Hartmann.'

'The regiments I allude to are those that have seen service in India'—

'India!' interrupted the colonel—'I know—we shall go there some day.'

'To be sure you will, and back again!' exclaimed Hartmann with a burst which I saw rather startled the colonel, wine-wildered as he was. 'You and your Arofskys are just the fellows to do that; and here—tossing off a glass of champagne—here's wishing with all my heart and soul that I may live to be there, and give them a hearty welcome when they do go. But I shall never finish if you interrupt me so. The question remains, how to discover which are those India regiments, and I confess I hardly know how that is to be done. There is, however, one plain course to pursue, which will answer the purpose of that knowledge. You must pit the Arofskys against the show-soldiers who never go abroad, and have no more fight in them than hares. They are brigaded together, I see by the papers, and you cannot fail to recognise them. Half of them, and the tallest fellows—six feet of bad stuff every one of them—all wear bear-skin caps; the others wear petticoats.'

'Petticoats! *Allons donc!*'

'But I say they do; and not so much as a pair of drawers beneath! There is hardly a pin's difference between the bear-skin caps and them, but I should recommend the petticoats for choice. Good-night, Colonel Puhmpenuff. Should you not,' added Hartmann, 'be able yourself to profit by the hint I have given you, impart it to such of your friends as may be able to do so, with my compliments, and if they don't ever afterwards remember me in their prayers, they are not the men I take them for—Ha! Major Kriloff! you here!'

I was even more startled than Hartmann at suddenly confronting that officer, as we rose from our chairs. He had, I was sure, been silently standing there some time; had heard, and, his lowering visage convinced me, appreciated Hartmann's mocking persiflage. He betrayed neither anger nor suspicion by words—contenting himself with telling a lie instead: 'I have this moment stepped in to remind you both that we start at dawn of day. Good-night, again, messieurs.'

'Well, Mr Hartmann,' said I, as soon as we were alone, 'that reckless, gibing tongue of yours cannot be governed, it seems, even by the menace of a halter, or a levelled row of muskets! For the future, you may be sure that Major Kriloff will not only be our jailer, but an indefatigable spy over all our motions.'

'Possibly; but don't be angry. I would not, and luckily I cannot, compromise you; and I am, as you say, reckless—mad! or nearly so. In fact, Mark Henderson,' he went on to say, 'I have a strong presentiment that, do what I may, I must lose the game—the game of life—I am playing here. Well thought of!' he added, taking a small sealed packet of papers from his breast-pocket. 'You had better at once take charge of these papers. They will inform you of everything it is necessary you should know relative to your Aunt Viola and myself; the understanding being, remember, that you do not break the seal of the envelope whilst I am alive and at liberty. And now, let us try to sleep.'

NICHOLAS SOLD.

During an interview which Martineff, the comedian and mimic, had succeeded in obtaining with the Prince [Volkhonsky, high-steward], the emperor walked into the room unexpectedly, yet with a design, as was soon made evident. Telling the actor that he had heard of his talents, and should like to see a specimen of them, he bade him mimic the old minister. This feat was performed with so much gusto, that the emperor laughed immoderately; and then, to the great horror of the poor actor, desired to have himself 'taken off.'—'Tis physically impossible,' pleaded Martineff.—'Nonsense,' said Nicholas: 'I insist on its being done.' Finding himself on the horns of a dilemma, the mimic took heart of grace, and with a promptitude and presence of mind that probably saved him, buttoned his coat over his breast, expanded his chest, threw up his head, and assuming the imperial port to the best of his power, strode across the room and back; then, stopping opposite the minister, he cried, in the exact tone and manner of the czar: 'Volkhonsky! pay Monsieur Martineff one thousand silver rubles.' The emperor for a moment was disconcerted; but recovering himself with a faint smile, he ordered the money to be paid.—*Harrison's Notes of a Nine Years' Residence in Russia.*

ANCESTRY OF WASHINGTON IRVING.

John of Irwyn had landed possessions in the parish of Holm, in Orkney, in 1438, when the county was still an appanage of the crown of Denmark and Norway. The Irvines of Sebay are very frequently mentioned in the times of Robert and Patrick Stewart, Earls of Orkney, and suffered very severely from the outrages of these rapacious nobles. They became extinct in the direct male line, *tempore* Charles I.; but one collateral branch had immediately before settled in the island of Sanday, and another, the Irvines of Gairstay, in the island of Shapinsay. They lost the estate of Gairstay several generations back, and sank down into the condition of mere peasants, tenants of Quhome, where some of them reside at this day. I was there lately with Mr Balfour, the proprietor of Shapinsay, who pointed out the old and modest house at Quhome where was born William Irvine, father of Washington Irving. Is it not somewhat singular that Sir Robert Strange and the author of *Bracebridge Hall* can be almost demonstrated of the same blood? I guess, if Irving knew his pedigree could be traced step by step up to John Erwyn of 1438, he would readily claim and vindicate his Orcadian descent.—*Dennistoun's Memoirs of Sir Robert Strange.*

'ROW, BROTHERS, ROW.'

Here is the scene of Moore's undying *Canadian Boat-song*, which he wrote on the fifth day of his descent of the St Lawrence from Kingston. Thirty-three years after he wrote this song, I had the pleasure of shewing Moore the original manuscript, which he had entirely forgotten. He had pencilled the lines, nearly as they stand in his works, in the blank page of a book which happened to be in his canoe, from whence he transcribed them at night. The sight of the original copy of these famous lines, recalling youthful days and happy associations, produced a great effect on the poet, who alluded in a touching manner to his passage down the rapids of life.—*Weld's Vacation Tour.*

RHUBARB MARMALADE.

Now that a supply of rhubarb is at hand, we present our readers with a recipe, which has been furnished us, and which we have had tested, and can therefore recommend, for making a delicious marmalade:—Pare and cut into very small pieces 2 lbs. of rhubarb; add 1½ lb. of loaf-sugar, and the rind of one lemon, cut very fine, and into very small pieces. Put the whole into a dish, or other deep vessel, and let it stand until next day. Then strain off the juice, and boil from half an hour to three-quarters; after which, add the rhubarb, and boil altogether ten minutes.—*Preston Guardian.*

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THE KNIFE-GRINDER.

I NEVER meet the knife-grinder's equipage, or hear the hoarse dull cry with which its owner announces his presence in the neighbourhood, without the revival of reminiscences partaking both of the rural and the artistic. Of the rural, because, times out of number, I have encountered the knife-grinder on his pilgrimages in high-roads, green lanes, and villages—at the back-doors of country mansions, and at retired dwellings and far-away homesteads, remote from cities and towns: of artistic, because I remember him and his wheel, grindstone and treddle, in a hundred pictures, at least, of the Flemish school, at public-house doors, in riotous fairs; or, as in the famous picture of Teniers, all alone in his glory, filling the whole canvas himself. Whether he is so very ancient, however, as the Dutch artists would make him out to be, I cannot say; but there is a picture by Van Watsnyn, of the exodus from Egypt, in which one of the liberated Goshenites appears in the character of a knife-grinder, sturdily propelling his apparatus towards the Red Sea.

In our towns and villages, the knife-grinder proclaims his advent by bawling, 'Knives gri-i-ind! Razors gri-i-ind!' but in London he rarely puts his lungs to such violent exercise, preferring to advertise his presence by setting his wheel rapidly in motion, and applying to its rough-hewn side the broad blade of a cleaver. The din suddenly raised by this simple means is perfectly astounding; it sets the windows shaking as though a son'-wester were blowing—rattles the crockery on the dinner-table, and lifts your nervous landlady clean off her seat; but it is too frequent to excite much surprise, and too well known to need any interpretation. If the operations of this wandering professor were conducted with as much skill as he exhibits in making a disturbance, his visits would be more welcome than they are; but, if the truth must be told, there is very little of the craftsman about him; he is a grinder rather than a sharpener of the various kinds of small blades intrusted to his care. If you have a razor with a doubtful edge, he will settle the doubt fast enough by grinding completely off what edge it has; if you offer him a penknife, he cannot conceive that he has done his duty by it until he has ground off three-fourths of its substance; and you will find it to your advantage to limit his services to table-knives, shears, and such larger ware as may require his art. For any shortcomings in the niceties of his profession, however, he atones in some degree by the exercise of various subsidiary callings, for one or other of which, as a housekeeper, you will be sure to have occasional use. Thus you will see

hanging beside his wheel a pot of burning coal, shewing that he adds to the profession of knife-grinder that of tinker; and he is just as ready to administer to the necessities of a leaky sauce-pan, as to those of a notched carving-knife. Then, in a long box, fastened to the frame of his wheel, he has all the means and appliances for the repair, even to the re-boning, of defeated umbrellas, and for the ferruling of walking-sticks; and in the chest of small tools in front of his breast, he has picklocks of all sizes, and can open your bureau if you happen to have lost the key. Besides all this, he will cobble bell-wires, bell-handles, and garden-gates—will fasten a ring to a patten, or a hinge to a clog—or do any other little odd job in a make-shift way, by which he may earn a few coppers, and 'a glass of beer, your honour,' if you choose to give him that into the bargain. The London knife-grinder, it must be observed, is not always, in the common sense of the word, a pedestrian. Frequently he appears mounted on a seat in the rear of a four or three-wheeled equipage, which he propels, after the manner of a velocipede, by working a couple of treddles with his feet. This machine is his own manufacture—probably, had it been the production of another, he would have discovered long ere this, what is undoubtedly the fact, that it costs him just as much labour to make his way by stepping perpendicularly as horizontally.

It is a complaint among knife-grinders, that their trade is overdone. This may arise from two causes. In the first place, the occupation is one which serves as a sort of refuge for the destitute; no apprenticeship is required for it, and no more ingenuity than necessity very speedily teaches. A moderate capital will enable an aspirant to commence business, and the returns are forthcoming at once. In the second place, there can be no doubt that a business which promises a continual change of scene—which is controlled by no masters, guilds, or trades-unions, but is gloriously independent of them all, has very enticing charms for a considerable class, in whom the old nomadic instinct is active and strong. These two causes are probably sufficient to explain the alleged superabundance of knife-grinders. It is not to be supposed that there is anything superlatively fascinating in the practice of the art; abstractedly, the tread-wheel in any shape is not a delightful exercise; and the pressing of cold steel against a dripping stone, in the open air, in all weathers, can awaken few pleasurable emotions. No; the man who is a knife-grinder by choice, must be something of a vagabond in his instincts—fond of the romance that is an element of continual change of scene, and impatient of the routine and the restraints of a settled life. Accordingly, we find in many parts of the country, that the knife-

grinding, like the tinkering trade, is in the hands of the gipsies; and we find, too, that they have the reputation, whether justly earned or not, of making it a convenient cover for petty thefts, and the means of spying out the land, as a preliminary to more serious depredations.

In France, the knife-grinder is not known by that name. If you look for him in the dictionary, you will find him denominated *Gagne-petit*; which is, in fact, his popular name. He is called *gagne-petit*, or little gains, doubtless because he does not gain much; he is entitled, however, to the designation of *Rémouleur*, which truly means grinder. When the French grinder comes upon the scene, he announces himself with the shrill cry, 'Répassir ciseaux!'—which is abominable French for 'scissors to grind;' but he says nothing about knives. Whether knives in France are ever ground, I do not pretend to say; but that, as a general rule, they do not cut, I am bound to affirm. I remember the time when Paris could boast a goodly number of grinders—when the shrill notes 'Répassir-ciseaux!' were to be heard daily, and at an early hour of the day especially, along the quays and markets, and in the quiet and fashionable quarters of the Marais and St Germain at a later hour. The trade was exclusively in the hands of immigrants from the southern provinces of France, who spoke a miserable patois, hard to be understood by the Parisian, and totally unintelligible to a stranger. They were, however, well-meaning, simple-hearted fellows, free from the vices of the metropolis, and inured to a life of the severest abstinence and self-denial. The grinders of Paris, though not yet extinct, have considerably diminished in number. They have been driven to adopt some other occupation, in consequence of the cutlers appointing each a certain day in the week for grinding—notifying the same by a placard in their shop-windows. Any of my readers who search the municipal archives of Paris, will find a little history recorded concerning one of them who had driven his grindstone through the streets and suburbs of the city for more than fifteen years; which I see no reason why I should not reproduce here. It runs to the following effect:—

Antoine Bonafoux was a grinder, living frugally upon the produce of his precarious industry. Upon the same lofty floor of the house in which he lodged, dwelt a poor widow of the name of Drouillant, who had once seen better days. The death of her husband had deprived her of her resources, and driven her to a garret, where, with an only child—a boy too young to labour—she worked early and late at her needle for the means of subsistence. Bonafoux, whose instinct led him to comprehend and sympathise with her misfortunes, if he passed her on the stairs, would manifest his respect by a low bow, and his sympathy by a courteous inquiry after the little boy; though he sought no further acquaintance. But the widow grew too feeble to work, and seeing her suffering from want, he called on her one morning, and insisted on her borrowing a portion of his savings, alleging that he had a sum in the bank to which he was constantly adding something, and that he could well spare it. The brave fellow knew well enough that he was depositing his earnings in a sinking-fund; but it was not for him to stand by and see a poor lady and a mother pining for assistance which he could render. So she became his pensioner, with the understanding that she was to repay him when she could. Suddenly, during the absence of the grinder, a stroke of apoplexy prostrated the poor widow. The whole house was in alarm; the doctor was sent for; and as soon as he had administered to her present wants, arrangements were made for carrying her to the hospital—that ante-chamber of the tomb to the unfortunate poor of Paris. At this moment Bonafoux came in. 'Stop,' said he, 'that lady must not go to the hospital; I know her better than you do;

it would kill her to take her there. Doctor, attend to her here, and do your utmost; I will defray your charges.' The poor lady recovered slowly under the careful nursing which the grinder procured for her; but was never able to resume her needle-work. Bonafoux supplied all her wants. When the boy grew old enough, he apprenticed him to a stove-maker, and cut up his own garments, to provide him with an outfit. A second attack of apoplexy deprived the poor mother of the use of her limbs. The grinder continued his benefactions to the last hour of her life—nor relaxed his guardianship of her son until he was able to earn his own maintenance. It was for this act of truly Christian charity, extending over a long period, that the French Academy, in 1821, awarded to Antoine Bonafoux a gold medal and a prize of 400 francs. The historian who records the deed, declares that the grinder was worthy of the honour, and, in addition to that, of the esteem of all good men; a judgment in which the reader will probably concur.

Another story in which the French grinder is concerned, was told me some years ago by the son of the person chiefly implicated. It was in these terms: My father was a surgeon in the English army, under the Duke, and served in the beginning of the Peninsular war. At one of the skirmishes near Salamanca, he was out seeking for wounded, and was taken prisoner. With two others, he was put on horseback, and, under charge of an escort, marched into France. Towards evening on the third day after crossing the Pyrenees, he managed to give his guardians the slip, and hid himself in a wood. There he waited till the hue-and-cry was over, and till night grew dark. With the stars only for guidance, he travelled all night, concealing himself again in a wood when day dawned. Covering himself with leaves and branches, he lay down to rest, and slept soundly for several hours. Noon had gone by, when he was awoke by the heat of the sun's rays. On looking round him, he perceived that he had made his lair close to a footpath which wound through the forest; and in the distance he could see, through the brambles, a grinder approaching with his wheel. He lay still, expecting the man to pass; but the fellow stopped under a tree, gathered a few dry sticks, and made a fire, put on a pot to boil, dropped sundry savoury ingredients into it, and fed the flame at intervals with fuel. While the soup was preparing, he busied himself with some repairs to his machine—now soldering with a hot iron—now driving a nail or two with a hammer. My father had eaten nothing since the day before at noon, and was never in his life good at starving or cheating his stomach. When the savoury fumes of the soup were borne to him by the wind, it was as much as he could possibly do to remain quietly in his covert; but when he saw the fellow produce a huge hunch of bread, cut it into strips, begin sopping them in the soup, pour the latter into a tin bowl, and apply himself to spooning out the succulent morsels—flesh and blood could endure it no longer. With a terrific shout, he bounced from his lair, seized the soldering-iron with one hand, grasped the affrighted grinder by the throat with the other, and laid him sprawling. The poor man begged for mercy.

'My good fellow, I don't want to rob you,' said my father—who compassionated his wild terror—'but I must share your dinner.' My father spoke French fluently, but he brought about a clearer understanding of the subject by the display of a few coins. The dinner was shared on the communistic principle, and having dined, the two strangers soon became good friends. The grinder knew well enough whom he had fallen in with; he had heard the story of the prisoner's escape, and expressed his conviction that he would be taken again, as the whole country would be on the look-out for him. This was far from a consolatory

prospect for my poor papa, who had six of us waiting for him at home. But he took heart, and resolved to defeat his pursuers, if possible. He began to draw out the grinder, with a view to make the best use of any information he could get. He learned that the man was not known in the neighbourhood; that he was travelling from Auvergne towards Brittany; and could maintain himself well on the road by his trade. My father's plan was soon formed.

'Now, Monsieur Jacques,' said he, 'you must sell me your grindstone and traps, and teach me how to use them. You must let me have your blouse and cap, and wooden shoes and etceteras; and I must be the grinder who is going to Brittany, and you must get back to the Cantal how you can.' Jacques laughed at this as the maddest proposition that could be thought of; but finding that it was perfectly serious, endeavoured to dissuade his new friend from an attempt promising nothing but defeat and disgrace. But my father would not be deterred from the enterprise; and the grinder at length agreed, for ten guineas, to dispose of his equipage, and indoctrinate the purchaser in its use. That evening he went off to the nearest town, leaving his kit in my father's care, and bought new clothing for himself, together with a stock of provisions enough for several days for the escaped prisoner. The next morning, after a few lessons in the art of grinding to one who had been too well used to the mechanical arts to need much teaching, Jacques set my father forward on his route. Before parting, he shewed him a secret cavity in one of the solid legs of his machine, from which he took a few francs, the produce of his savings, and recommended him to make it the depository of his remaining gold, as a safe place of concealment, should he meet with robbers.

It was thus as a grinder that my father perambulated the heart of France. He made as little use of his tongue as possible on his route, but was obliged to labour for his subsistence, as he dared not incur suspicion by changing English gold. The passport of honest Jacques stood him in good stead, and he luckily escaped questioning. On approaching the coast of the Channel, he made for a town where he knew that English officers were at liberty on parole, and was so fortunate as to fall in with a lieutenant in the navy, with whom, but a few years before, he had entered the Tagus.

In spite of the watchfulness of Napoleon's police, and of the severity of his decrees wherever the English were concerned, there were men to be met with along the coast, who, for a sufficient consideration, were always ready to incur the risk of aiding the escape of a prisoner, or assisting in any other exploit by which a round sum was to be made. To an adventurer of this class the lieutenant introduced my father. The man was a smuggler by profession, and it mattered little to him whether he smuggled English goods into his country, or an English gentleman out of it. He agreed, for a hundred guineas, to put my father either on board of a British man-of-war, or on shore on the English coast, within a few weeks. When the bargain was struck, my father, who was by this time sick of his lumbering machine, wheeled it, by the smuggler's advice, into a deep pond, and took to a comfortable hiding-place in a cavern high up in a cliff that overlooked the sea. It was fortunate he did so. He was hardly safe in his retreat when his pursuers, who had contrived to extract a confession out of honest Jacques, tracked him to the town, and commenced a rigorous search for the pretended grinder. Had they found the machine, they would have known that the owner was not far off; but deceived by false intelligence from the scouts of the smuggler, they started off again on a wrong track, and left the coast clear. For five weeks, my father sat brooding alone in his eyrie; his sole employment, watching for the desired signal by day, and drawing

up provisions in a basket at midnight. The signal gladdened his eyes at last in the early dawn of morning. He uncoiled his rope—slid down by it—stepped on board the smuggler's boat—mounted a fast-sailing cutter in the offing—and in less than forty-eight hours stood safe on his native soil. He had a tenderness for vagabond knife-grinders to the last day of his life, and would give them a job whenever they came in his way.

With this veritable history I may close my account of the knife-grinder. Were I disposed to pursue the subject further, I might recall to the recollection of the reader that well-known German vagabond of a grinder whose boast it was—

Ich schleife die Scheeren und drehe geschwind,
Und hänge mein Mäntelchen nach dem Wind;

who prated so glibly of his independence and his generosity, and illustrated both by swindling poor Hans out of his fat goose: I might speculate on the antecedents of the knife-grinders of the metropolis, and weigh probabilities with regard to those ingenious lads dimly pointed at in the *Vicar of Wakefield*, who are supposed to bind themselves apprentice to turn a cutler's wheel for seven years; and might exhaust a deal of valuable conjecture as to whether, at the end of that time, they were quite qualified for knife-grinders: and lastly, I might point to the 'Needy Knife-grinder' of Canning, whose 'hat had a hole in it—so had his breeches'; who had a taste for beer, but none for politics; and who was denounced and kicked by the 'friend of humanity,' as a 'sordid, unfeeling reprobate, degraded, spiritless outcast,' because he was insensible to the misery of his lot. But these things the reader knows already, and I need not dwell upon them. Let the knife-grinder, then, pass on; and let us listen in silence, and not without some good-will, to his cry—'Knives gri-i-nd! Knives gri-i-nd!'

THE GREAT CARRAC.

ONE of the most important events recorded in the earlier naval annals of England, is the capture of a large Portuguese ship, named the *Madre del Dios*, but better known to our ancestors by the more familiar appellation of the Great Carrac.* We use the word important advisedly, though, as a feat of arms, a distinguished demonstration of nautical skill and indomitable valour, the capture of this vessel was merely one among the long series of naval victories that, from an early period, had attended the auspicious fortunes of the British flag. From the time of King Alfred, the English had ever claimed the supremacy of, at least, the narrow seas; and the defeat and destruction of the Spanish Armada, just four years previous to the period of which we write, proved to the world that the claim could be well substantiated. The importance of this capture may, however, be more readily recognised in another point of view, when we state that it opened up to the nation an entirely new branch of commerce, and directly led to the establishment of the first East India Company. The valuable productions of the East were at that time almost unknown in England, a few only finding their way hither by the two ships that once a year voyaged from London to the Mediterranean. The carrac, the largest and richest prize that had ever been brought to England, first exhibited the rich treasures of the East to the wondering and greedy eyes of Englishmen, and stimulated the commencement of that direct traffic with India which has since formed so important a feature in British commercial enterprise and political power. Quaint old Hakluyt, alluding to the carrac, says: 'She first discovered those secret trades and

* Portuguese, Carraca.

Indian riches which hitherto lay strangely hidden and cunningly concealed from us; whereof there was, among some few of us, some small and imperfect glimpse only, which now is turned into the broad light of perfect knowledge.'

Connected with great historical names, followed by remarkable results, and exhibiting a picture of our early naval adventurers—of ideas and practices so different from those of the present period—the story of the Great Carrac—an important though forgotten episode in the annals of Queen Elizabeth, is not without its peculiar interest—we may say its moral. The history of the past has been compared to a lofty and spacious gallery, the walls of which are embellished with splendid life-size pictures, representing virtuous actions and heroic achievements, while its floor is covered with the vile corruption and repulsive remains of the noisome charnel-house. From the paintings, we should derive a stronger impulse to honourable exertion; from the rotten bones of the charnel-house, a more decided repugnance to their still existing representatives.

The expedition which ultimately led to the capture of the carrac, though designed for a very different purpose, was planned by the chivalrous but unfortunate Sir Walter Raleigh. Its original object was to intercept the silver ships belonging to the king of Spain, on their homeward passage from Mexico, and to plunder Panama by a spirited land movement across the narrow isthmus which separates, as well as joins, the two Americas. It was got up on a principle somewhat similar to the joint-stock companies of the present day. Raleigh embarked his whole fortune in it; Sir John Hawkins, and several merchants of London, joined in the adventure; Queen Elizabeth herself became what we would now-a-days term a shareholder, supplying two ships with £1500, and granting the authority of her Royal Commission. To use a modern phrase, the stock of the company consisted, in all, of 5005 tons of shipping, and £18,000.

The fleet, under the command of Raleigh, was fully equipped, and ready to sail in the February of 1592; but a long series of westerly winds confined the ships in Plymouth Harbour till the greater part of their provisions were consumed. The necessity for procuring fresh supplies brought on further delays, so that the May-day merry-makings had passed and gone ere Raleigh, distressed and disgusted by the loss of so much valuable time, was enabled to put to sea.

He was destined to experience a still severer trial. The very day after the expedition sailed, it was overtaken by Sir Martin Frobisher, bearing the queen's orders to Raleigh, desiring him to give up the command, and return immediately to England. Eager to distinguish himself, and trusting to return with a success that would excuse his breach of duty, Sir Walter refused to comply with the queen's commands, alleging, as a palliation of his disobedience, that the mariners had no confidence in any other leader.

The cause of Raleigh's disgrace and recall was one of the principal events in his romantic life. The queen had discovered, when it could be no longer concealed, his marriage with Miss Throckmorton, one of the maids of honour. Elizabeth was highly incensed at the weakness of her attendant, and the boldness of Raleigh in presuming to fall in love and marry without the royal consent; for she ever insisted that the whole admiration of her courtiers should be concentrated on herself; and if any lady of her court, or officer of her household, dared to infringe upon this regal monopoly of gallantry, the consequence was her most severe displeasure. It is pleasing to have to relate, that whatever indiscretion Miss Throckmorton may have been guilty of, by her private marriage, it was fully atoned for in after-life. In all her husband's misfortunes, she was ever an attached and devoted wife, and he always regarded her with the most

implicit confidence and respect. In short, she was a woman eminently fitted, by her virtues and abilities, to be the partner of the unfortunate courtier, soldier, and scholar—Sir Walter Raleigh.

The expedition continued on its course, and in the mouth of the Channel met a French ship returning from Spain to Calais. On board this vessel there was one Davies, an Englishman, who had escaped from 'a long and miserable captivity' in Spain. From this person, and the captain of the French ship, Raleigh learned that delay had been fatal to the object of the expedition. The king of Spain hearing of it, had sent orders to America, forbidding the treasure-ships to sail that year. Notwithstanding this intelligence, Raleigh proceeded till off Cape Finisterre, when, considering the season too far advanced for the attack on Panama, he divided his fleet into two squadrons, one of which, under the command of Frobisher, he ordered to cruise off the coast of Spain; the other, under Sir John Burrowes, to cruise off the Western Islands. He then returned to England, and was immediately, with Miss Throckmorton, committed to close confinement in the Tower.

The division commanded by Burrowes consisted of but three ships—the *Foresight*, belonging to the queen; the *Roebuck*, to Raleigh; and the *Dainty*, to Sir J. Hawkins. On reaching the island of Flores, Burrowes found there two small vessels, the *Golden Dragon* and *Prudence*, belonging to one Moore and some merchant adventurers in London. These vessels had arrived, the day previous, 'on an intended purpose to tarry there for purchase,' as plunder was quaintly termed in those days. Burrowes entered into a written agreement with the commanders of these vessels, 'to have, possess, enjoy, and partake of all such prizes as should be taken, jointly or severally' by them or his own ships for a certain period. The day after this 'consortment,' as it was termed, the reports of cannon were heard booming in the offing; and the admiral, putting to sea, discovered a Portuguese vessel chased by an English squadron. The Portuguese captain, finding his flight intercepted by Burrowes, resolved to run his ship on shore, and destroy her, rather than allow her to be captured by the English. He accordingly did so, and then immediately began removing the most valuable part of his cargo. Burrowes, on joining the English squadron that had so unexpectedly made its appearance, found it to consist of five ships belonging to Clifford, Earl of Cumberland, and engaged, like himself, in the pursuit of *purchase*.

It does not appear very clearly that we were actually at war with Portugal at that period. Indeed, Elizabeth was then anxious to enter into an alliance with that nation, to aid her against her great enemy—Spain; but in the olden time it frequently happened that nations were at war in one part of the world, while at peace in another—at war on the sea, while at peace on the land. The pope, in the plenitude of his power, having divided the world, presenting India to Portugal, and America to Spain, those nations claimed the privilege of capturing the vessels of any other powers that presumed to pass certain very badly-defined boundaries; and the ships of the other powers, naturally enough, retaliated by capturing Spanish and Portuguese vessels wherever they met with them. The great and sudden development of English maritime enterprise in the reign of Elizabeth, may be partly ascribed to this state of continual warfare with Spain and Portugal on the ocean. The high nobility, who, in that semi-feudal age, still ruffled with troops of retainers, did not disdain to engage in this system of legalised piracy, and found a profitable employment for their needy followers, by sending them out to capture the rich treasure-ships returning from India and America. Drake, Frobisher, and almost all our early naval heroes, started in life as the retainers of some adventurous noble. Clifford, Earl

of Cumberland, was the most celebrated of the latter class. He commanded his own ships at the defeat of the Armada, and distinguished himself so greatly, that Elizabeth ever after termed him her captain.

The Portuguese, landing his cargo before their very eyes, was no doubt a galling sight to the English adventurers, but a rising gale prevented them from approaching the land. The next morning, however, the wind having fallen, they sent in their boats well manned and armed, but were again disappointed, the Portuguese having set his vessel on fire. The English boats were, consequently, compelled to return to their vessels without acquiring plunder, but they made two prisoners, Dutchmen, who had served as gunners on board the Portuguese ship. The prisoners would give no information, until threatened with torture; they then acknowledged that the burning vessel was the *Santa Cruz*, a richly laden Indianman, and that her consort, the *Madre del Dios*, a much larger and richer ship, might be daily expected in the same track.

On receiving this important intelligence, Lord Cumberland's captains agreed to unite their forces with Burrowes, and endeavour to capture the *Madre del Dios*. The ships, under the command of Burrowes, being now ten in number, he stationed them two leagues apart, covering upwards of a degree of longitude, so as to insure the greatest range of vision, and impatiently waited for the expected prize. He did not wait long. At daylight, on the 3d of August, the captain of the *Dainty* espied the wished-for carrac, and immediately bore down towards her. The carrac was the largest ship of the period, and from the description given of her, must have resembled a Chinese junk more than any other existing specimen of naval architecture. She was 1600 tons burden, drew 31 feet of water, had seven decks, and carried 800 men, besides a large number of passengers returning to Portugal, enriched with the treasures of the East. Notwithstanding the immense disproportion in size and force, the *Dainty*, at ten o'clock in the forenoon, began, single-handed, to engage her formidable adversary, but sustained severe damage and loss in the unequal contest. The *Roebuck* next came into action, and was soon afterwards supported by the *Golden Dragon*; but the carrac, making a running-fight, ably defended herself. As the day wore on, the combat continued, the carrac, from her great size, armament, and number of men, keeping her enemies at bay. Towards evening, Captain Cross, in the *Foresight*, came up. Burrowes, who was in the *Roebuck*, hailed Cross, asking what was best to be done. 'We must lay her aboard,' Cross replied, 'or she shall escape to the land, and we will lose her like the *Santa Cruz*.' Acting upon this advice, the English ships closed to board the enemy; but in the manœuvre, the *Roebuck* and *Dainty* fell foul of each other, the *Dainty's* mainmast was shot away, and the *Roebuck* received a shot between wind and water which caused her to leak so fast that all hands had to be called to the pumps. The *Foresight* was now the only undamaged English ship engaged with the carrac. It was seven o'clock in the evening; the carrac was fast approaching the land, and Cumberland's ships were still far from the scene of action. In this emergency, Cross adopted the desperate expedient of laying his ship athwart the bows of his immense enemy. Succeeding in this bold attempt, he lashed the carrac's bowsprit to the mainmast of the *Foresight*, and withdrawing his men into their close quarters, kept up the engagement with small-arms for the space of three hours. The carrac's way through the water being completely deadened by the *Foresight* lying across her bows, gave time for two of Cumberland's ships to come up; and at ten at night the Portuguese was carried by boarding, after a desperate contest of twelve hours.

The carrac was now taken, but a scarcely less terrible scene followed the sanguinary horrors of the

combat. As in a town taken by storm, the victors commenced a general pillage of the ill-fated ship and her unfortunate passengers. So eager were they, so recklessly did they seek for spoil, that in their infuriated rapacity they madly risked their own lives, and all the wealth they had so hardly contended for. It being night, each man lighted a candle to aid his search. A fight ensuing among some of the plunderers, their candles were thrown down, setting fire to a cabin containing 600 great gun-cartridges; and if it had not been for the presence of mind and active exertions of Captain Cross, the prize and its captors would have been blown into the air. The plunder continued till next morning, when Burrowes' ship having come up, the admiral claimed all pillage in the queen's name. But the Earl of Cumberland's men denied the queen's authority, alleging that they had not fought for the queen, but for their lord, whose retainers they were; and he always allowed them their rightful purchase, which was all the plate, money, and jewels found on the upper decks.

Burrowes, however, succeeded in stopping further pillage, and then turned his attention to the wounded of the enemy, whom he treated with great kindness, compelling his own surgeons to attend upon them. To the Portuguese captain, Don Fernando de Mendoza — 'a gentleman well stricken in years, well spoken, of good stature, and comely personage, but of hard fortune' — his passengers, and crew, Burrowes gave a small vessel to carry them to Portugal, and permitted them to take away their personal effects. The 'hard fortune' of these poor people was not even then over. On their way to Lisbon, they fell in with another English vessel, and were stripped almost naked, losing 900 diamonds and other 'odd ends' that they had managed to take with them from their captured ship. Burrowes made the best of his way to England with his rich prize, and after narrowly escaping shipwreck on the Scilly Islands, arrived at Dartmouth in the month of August.

The bells of England had not rung a merrier peal since the defeat of the Armada, than they did when the news arrived of the carrac's capture. The value of the prize was estimated at fabulous amounts; even Raleigh, who was still a prisoner in the Tower, calculated her to be worth £500,000. Traders of all descriptions flocked to the seaports, and purchased plate, diamonds, rubies, pearls, musk, ambergris, silks, and gold-embroidered stuffs from the fortunate sailors. The queen immediately appointed a commission to take charge of the prize, and issued a proclamation, commanding all plunder to be delivered up to the commissioners in ten days, 'the same, if considered to be lawful pillage, to be returned to the captors.' The commissioners, on arriving at Dartmouth, found the carrac gutted to the lower-deck; and though Portsmouth resembled Bartholomew Fair, not one particle of plunder was delivered up to them. They, however, proceeded to examine witnesses relative to the pillage, but were disgusted by the gross perjuries committed in the evidence. When the commissioners cautioned the witnesses, and pointed out the sinfulness of such conduct, the latter profanely replied, that 'they had rather venture their souls in the hands of a merciful God, by perjury, than their fortunes, gotten with the peril and hazard of their lives, in the hands of unmerciful men.'

A large folio volume of the Lansdowne manuscripts is nearly filled with documents relative to these proceedings. A complete mania seems to have sprung up all over England to possess something that had been taken in the Great Carrac. The most abject letters were written by ladies of the highest rank to the officers and men of the expedition, begging for any trifling article of plunder, but especially mentioning porcelain, then almost unknown in England.



The queen finding the labours of the commissioners utterly fruitless, and also suspecting them of receiving bribes, suffered her love of money to overcome her resentful feelings against Raleigh, and liberated him from the Tower, giving him authority to use the most stringent means to recover the missing plunder. On his arrival at Portsmouth, the sailors surrounded him with shouts of joy and congratulation, but he replied: 'I am still the queen's poor prisoner,' pointing to Blunt, a warden of the Tower, under whose surveillance he still was. Raleigh immediately instituted the most vigorous measures. All coasting-vessels, wagons, and travellers were searched, and letters opened. By these means, a large cross, formed of a single emerald, sixty-one diamonds, and 1400 pearls, with an immense quantity of other valuable property, were reclaimed.

Burrowes' ship was searched, and in the admiral's own cabin were found several large chests filled with damasks, taffetas, and porcelain. The commissioners seized these goods, but Burrowes claimed them on the plea, that he was a 'gentleman of quality, and the queen's admiral, and required them to make presents therewith to his friends.' One of Cumberland's men then stated to the commissioners, that he had secured, as part of his spoil, an agate-hafted dagger, mounted with diamonds and rubies, but that Burrowes had taken it from him, and he trusted that, in equal justice, the admiral would be compelled to give it up. Burrowes complied by producing a common dagger of English manufacture as the one alluded to; and this 'ringing the change,' as a modern swindler would term it, was considered rather a clever and laughable trick of the gallant admiral. The commissioners also reported that Burrowes wore in a ring a large white stone, but, 'though it be hard, and write in glass,' they could not tell if it were a diamond, and so they permitted him to keep it.

Captain Cross, of the *Foresight*, seems to have obtained the greatest share of the plunder—'as much as loaded a small vessel.' The captains of Cumberland's ships had also a large share. Silver basins, shields covered with beaten gold, porcelain, mother-of-pearl spoons, silks, and tapestry were taken from them; but they succeeded in retaining a great number of other valuable articles. The captain of the *Dainty* put into Harwich, assigning as his reason for doing so, that his men were so determined 'to see the bottom of the carrac,' he could not trust them near her. But his real reason was, that Harwich being near London, he had a greater facility of disposing of his spoil. Before officers were sent down to search his vessel, he sold spices to the amount of £1400; and even afterwards, several wagons were seized laden with cinnamon and calicoes, that had been discharged from his ship.

Thomson, the captain of the *Dainty*, considered himself, as he expressed it, to have been very hardly dealt with. The *Dainty's* mainmast being shot away in the engagement, she fell to leeward, and five days elapsed before she could rig a juremast and rejoin the fleet. Then Thomson found, as he stated to the commissioners, that all the money, silk, jewels, apparel, and chains of gold had been divided among the other captains. He complained to Burrowes, who replied that the plunder was over, and proclamation made for the queen, and that he (Burrowes) was for the queen. 'So am I, too, I hope,' said Thomson; 'but is there never a chain of gold or suit of apparel for a man—no porcelain or silk stuffs for a man's wife?'

'I kept something for you,' said the admiral, 'because you were away;' which something was a common sailor's chest, that had been broken up before.

The cargo of the carrac, left after the general plunder, was brought to London, and sold at Leadenhall. The spices, drugs, and dye-stuffs fetched £114,000; the remainder, consisting of silks, calicoes, carpets, and ebony furniture, sold for £27,200—making in all,

£141,200. The grand question then arose—how should this sum be divided among the captors? The Earl of Cumberland claimed it all, on the plea that his ships had made the capture, the *Foresight* being 'as good as taken' by the carrac when they came up. The queen anxiously wished to have the whole, for the purpose, as she stated, of defending England and the Protestant Church against the Catholic king of Spain. But the sagacious Burleigh, her Lord Treasurer, and Sir John Fortescue, the Chancellor of the Exchequer, urged upon her the impolicy of doing so; stating that adventurers, if not treated in a princely manner, would be discouraged from future enterprises. The queen, however, claimed the privilege of dividing the spoil as she thought proper, and finally apportioned it in the following manner:—Cumberland received £18,000; Raleigh, £15,900; Moore, £2000; and the merchant-adventurers of London, £12,000. It does not appear how much Hawkins received, and there were a number of minor claimants, who received small sums, making the amount divided £57,600. The queen retained to herself the lion's share, amounting to £83,600. The unfairness of this distribution gave general dissatisfaction; but Raleigh, the head and planner of the expedition, did not dare to remonstrate. In fact, he purchased his release from the Tower, and renewal of the queen's favour, by his silence. In a letter to Lord Burleigh, now before us, he writes: 'Fourscore thousand pounds is more than ever a man presented her majesty yet. If God has sent it as my ransom, I hope her majesty, of her abundant goodness, will accept it.'

The *Madre del Dios* remained in the harbour of Dartmouth for two years after her capture; the expenses of pumping and taking care of her during that time amounting to £216. The corporation of Dartmouth then offered £200 for her, promising that whatever profits she might gain, would be invested in an hospital for the poor of the town. Whether her stout timbers rotted in the mud of Dartmouth, or were ultimately broken up for firewood, the manuscript records, from which we have gleaned the preceding particulars, are silent. We know that the proposal of the corporation was rejected, and this is the last we can learn of the 'Great Carrac.'

HOW TO SEE THE WORLD.

Among the valuable lessons which travellers teach, is the art of making the best of everything just at the time when most wanted. A traveller, especially in thinly-inhabited or semi-barbarous countries, is perpetually put to his wits to devise a mode of overcoming difficulties. His food fails, his beverage fails, his fuel fails, his clothing fails—his instruments, his arms, his cooking-vessels, his tents, his wagons, his beasts of burden, his guides, his servants, his money, his health—any of these may fail him at a pinch; and it is a part of his duty as a traveller, an almost indispensable condition of his success, to possess a facility of contriving make-shifts, instead of sitting down hopelessly to mourn over something which is lost, or used up, or broken. To catalogue such probable make-shifts, and to supply hints for surmounting difficulties, are the objects of Mr Galton's remarkable volume, lately published.* It is a small book, but is stuffed full of facts; and many of these facts are not only of great value to a traveller, but are worth knowing by those whose travels extend only a little way beyond their own firesides. He treats in succession of water, fire, bivouac, clothes, food, cookery, discipline, defence, hiding-places, boats and rafts, paths, carrying weights, carpentry,

* *The Art of Travel; or, Shifts and Contrivances available in Wild Countries.* By Francis Galton, Author of *Explorations in Tropical South Africa*. With Woodcuts. London: John Murray. 1885.

smith's-work, skins and horns, writing-materials, riding and draught animals, saddles and harness, wagons and vehicles, guns, trapping, fishing, medicines, presents, articles for barter, and mapping implements. It may be interesting to jot down a few curiosities from this budget.

When an exhausted traveller is in want of water, the converging flight of birds, or the converging fresh tracks of animals, may often guide him to a spring or pool: it is about nightfall that desert-birds usually drink, and the thirsty traveller looks out for their course of flight at such a time. If a thirsty man strips, and exposes his person to a shower of rain, his thirst is greatly allayed. If he has nothing to drink but muddy water, let him tie together a good handful of grass in the form of a cone, place the large end of the cone up the stream, and the water will become partially filtered in the act of passing through the grass. If a traveller be short of water-vessels, a canvas-bag, well greased, will hold water for a considerable time.

For striking a light in the bush or the desert, agate is better than flint: it makes a hotter spark. Cigar-fuses are not worth taking: wet spoils them. The crystalline lens of a dead animal's eye has been sometimes used as a burning-glass, wherewith to obtain fire. The ashes of a cigar rubbed into a piece of paper will qualify the paper to serve as tinder. In the absence of wood fuel, dried animal manure makes an excellent substitute. The same may be said of bones: the Falkland Islanders often cook part of the meat of a slaughtered ox by the heat of his own bones; and the Russians, when in Turkey in 1829, were driven to use bones from the cemetery at Adrianople as fuel. In bivouacking for the night, 'the oldest travellers will ever be found to be those who go the most systematically to work in making their sleeping-places dry and warm.' A bush is not a good shelter for a sleeping-man; it may be leafy and close at a yard from the ground, but it lets through the cutting wind lower down. 'A man, as he lies down upon his mother-earth, is but a small low object, and a screen of eighteen inches high will guard him securely from the strength of a storm;' a broad sod, seven feet by two, and turned up on end, will form such a screen. If nothing better offers, 'a European can live through a bitter night, on a sandy plain, without any clothes besides those he has on, if he buries his body pretty deeply in the sand, keeping only his head above ground;' and Mr Moffat speaks of 'the real comfort, even luxury,' which he once found in such a sandy blanket. That sleepers find snow to be a warm bed in a bitter climate, is well known.

Woven cloaks and coverlets admit the wind as through a sieve, unless the texture be close. 'It is in order to make their coverings wind-proof that shepherd lads on the hills in Scotland, when the nights are cold, dip their plaids in water before sitting or lying down in them: the wet swells up the fibres of the plaid, and makes the texture of it perfectly dense and close.' The Highland poachers adopt an odd mode of 'tucking' each other in at night: when on the moor-side on a frosty night, they cut quantities of heather, and strew part of it as a bed on the ground; then all the party lie down, side by side, excepting one man, whose place among the rest is kept vacant for him; his business is to spread plaids upon them as they lie, and to heap up the rest of the heather upon the plaids; this being accomplished, the man wriggles and works himself into the gap that has been left for him in the midst of his comrades. The importance of flannel next the skin cannot be overrated: in the statistics of expeditions, it has been found that men without this comfort sicken and die in greater number than those provided with it. Mr Parkyns, the Abyssinian traveller, adopted a very primitive mode of keeping his apparel dry, at a time when he had no change of suit: he simply took off his

clothes, and sat upon them in a bundle until the rain was over! The following sounds oddly to stay-at-home people:—'There is no denying the fact, though it be not agreeable to confess it, that dirt and grease are great protectors of the skin against inclement weather; and that, therefore, the leader of a party should not be too exacting about the appearance of his less warmly clad followers. Daily washing, if not followed by oiling, must be compensated for by wearing clothes. Take the instance of a dog: he will sleep out under any bush, and thrive there, so long as he is not washed, groomed, and kept clean; but if he be, he must have a kennel to lie in. A savage will never wash unless he can grease himself afterwards—grease takes the place of clothing to him. . . . We can afford to wash, but naked men cannot.'

Nettles make a dish which travellers welcome if other food be scarce; when gathered quite young, and boiled, they are innocuous; and Messrs Huc and Gabet 'were able to enjoy this delightful variety of esculent more than a month.' The young stems of fern, boiled in pure water, 'realise a dish of delicious asparagus.' Old hides and skins, untanned, 'improve all soup, by being mixed with it, or they may be toasted and *hammered*!' Travellers in thinly inhabited districts are frequently taught by their daily wants to make *jerked* meat, consisting of dried pieces; or *pemmican*, made of meat dried, pounded, and mixed with grease and meal; or *caviare*, consisting of dried fish-roe, or the whole of a fish dried; or dried and pounded eggs. An animal may be boiled in *his own hide*, in default of a caldron or saucepan. Stick four stakes in the ground, and tie the four corners of the hide up to them, leaving the hide hollow or concave in the middle; then cut up your animal into small pieces, and put it into the hollow of the hide, with a sufficiency of water; put in several large very hot stones, and in due time there is your soup and *bouilli*. A kind of haggis may be made in the stomach of an animal: blood, fat, lean, heart, lungs, all the solids cut or torn into small fragments, are put into the stomach, and roasted by being suspended before the fire with a string. We are assured that 'it is a most delicious morsel, even without pepper, salt, or any seasoning.' Mr Galton recommends a traveller, heading a party of natives, to interrupt the monotony of travel by marked days, extra tobacco, sugar, &c.; avoid constant good feeding, but rather have frequent slight fasts to insure occasional good feasts, especially on those great gala-days, when marked stages of the journey have been reached.

The sort of attention paid to women in rude countries is, it must be confessed, nearly akin to that which is paid to useful animals of lower grade. 'Take the wives of a few of the natives with your party, if you can,' says Mr Galton; 'for they are of very great service, and cause no delay, for the body of a caravan must always travel at a foot's pace, and a woman will endure a long journey nearly as well as a man, and certainly better than a horse or a bullock. They are invaluable in packing up, and in retailing information and hearsay gossip, which will give clues to much of importance that, unassisted, you might miss.' An American chief told Hearne the traveller, that women were made for labour; that one of them can carry or haul as much as two men; and that they are maintained at a trifling expense, for 'as they always stand cook, the very licking of their fingers in scarce times is sufficient for their subsistence.' The 'rights of women' are now being advocated in the self-same continent where these wrongs of women were thus eulogised. The morals of travelling are sometimes rather queer. Mr Galton says: 'On arriving at an encampment, the natives usually run away in fright: if you are hungry, or in any need of what they have, go boldly into their huts, take just what you want, and leave fully adequate payment. It is absurd to be overscrupulous

in these cases.' So think also the Filibustiers in respect to Cuba. In travelling through a hostile neighbourhood, cattle keep guard very well: the habits of bush-life make a traveller, though otherwise sound asleep, start up directly at a very slight rustle of alarm among his cattle. A person riding a journey for his life sleeps most safely—'for he must sometimes sleep,' as Mr Galton assures us—with his horse's head tied short up to his wrist; the horse, if he hears anything, tosses his head, and jerks the rider's arm; while he will seldom be so careless as to tread upon his sleeping master.

A sylvan post-office for the wilds. If you want to leave a letter in a pre-arranged tree, 'clamber up the tree when it is dark to the first large bough, and sitting astride it, cut with a chisel a deep hole right into the substance of the wood, or you may make one by firing a bullet down into it; in this hole the letter, rolled up or folded quite small, is to be pushed, and the bark nailed down over it. No savage would ever dream of looking there for it.' So we should think. If you wish to cross a deep river with your horse, drive or push him in, jump in yourself, seize him by the tail, and let him tow you across: if he turns his head to try and change his course, splash water in his face with your right or left hand, as the case may be, holding on with one hand and splashing with the other, and you will in this way direct him just as you like. Captain Fitzroy's men once, in a difficulty, collected some boughs, wove them into a sort of large basket, covered it with their canvas-tent, puddled the inside with clay, and were out at sea eighteen hours in this fragile substitute for a boat. The following is curious:—'If caught by a gale, recollect that a boat will lie-to and live through almost any weather, if you can make a bundle of a few spare spars, oars, &c., and secure them to the boat's head, so as to float in front of and across the bow; they will act very sensibly as a breakwater, and the boat's head will always be kept to wind.' Water that is slightly frozen may be made to bear a heavy wagon by cutting reeds, strewing them thickly on the ice, and pouring water upon them; the whole by degrees becomes frozen into a solid mass.

Mr Galton's chapter concerning trapping is full of curious information. In relation to the power of animals to scent the approach of man, he says: 'Our own senses do not make us aware of what is disagreeable enough to confess, that the whole species of mankind yields a powerful and wide-spreading emanation that is utterly disgusting and repulsive to every animal in its wild state. It requires some experience to realise this fact: a man must frequently have watched the heads of a herd of far-distant animals tossed up in alarm the moment that they catch his wind. He must have observed the tracks of animals—how, when they crossed his own of the preceding day, the beast that made them has stopped, scrutinised, and shunned it—before he can believe what a Yahoo he is among the brute creation. No cleanliness of the individual seems to diminish this remarkable odour; indeed, the more civilised man, the more subtle it appears to be. The touch of a gamekeeper scares less than that of the master, and the touch of a negro or bushman less than that of a traveller from Europe.' Were it not for Mr Galton's great experience in this subject, we might have ventured to suggest, that the horror of the animals is perhaps rather moral than sensorial, resulting rather from an instinctive dread of man's power, than from an olfactory sense of man's personal unwelcomeness. The catching of condors and vultures is managed in a singular way. A raw ox-hide is spread upon the ground; one man creeps under it with a string in his hand, while one or two other men are posted in ambush close by; the bird flies down upon a bait placed on the hide, and the man seizes the legs, and binds them tight in the hide, when the poor bird becomes powerless.

Pedestrians, whose feet are apt to blister during long journeys, are thus advised: Rub the feet at going to bed with spirits mixed with tallow dropped from a candle into the palm of the hand; on the following morning no blister will exist, for the spirits seem to possess the healing power, while the tallow serves to keep the skin soft and pliant. 'Ease before elegance'—that is, soap the inside of your stocking before setting out, and break a raw egg into a boot before putting it on. It is impossible to glance over the pages of this book, without being struck with the number and variety of the disasters to which such travellers as Mr Galton are subject, and with the untiring patience exhibited in devising cures and substitutes whenever the disasters arise. If ever travelling can become an 'Art,' then will Mr Galton's little volume serve as a Manual, a Handbook, a Vade-mecum. But it is also full of readable bits for others.

PARIS IN MAY 1855.

PARIS is certainly a most amusing place. Every time we visit it, we find it in a violently new phase. The last time we were there was in September 1848, when, chancing to be at an evening reception of an ex-member of the celebrated Provisional Government, we found the leading subject of conversation to be the announced coming of Louis Napoleon to France, and a doubt whether he would be allowed to enter. Coming back in less than seven years after—but, after all, seven years is a long time in French history—we find this same Louis Napoleon the emperor of France—the almost autocrat of the country; and yet, to all appearance, a more popular ruler than any of the constitutional sovereigns of the last forty years. Paris, then sad and empty, with the dismal marks of intestine war pitting its walls, was now full and gay, all past troubles and damages repaired and forgotten. Most surprising change of all, we now visited it as the city of an intimate ally and friend of England! To what possible new aspects and conditions may it introduce us after another period of seven years!

We arrived at the end of the week in which the Exposition had been opened. Leaving leafless trees and inch-long crops in England, we found laughing summer on the banks of the Seine, the lilac in full blossom, blue skies, fleecy clouds, and an agreeable temperature. Open-air life was already in full current, though, we were told, it had been so for only a few days, for here the season was comparatively late also. All the characteristic features of the place—the lofty white buildings cutting the clear air, the picturesque shops, the multitudes of women and children in the Tuileries gardens, the groups of men seated in front of the cafés, the good-humoured air of the entire population, making it so difficult to understand whence arise the occasional revolutionary violences—each attracted their share of a gratified attention: so passed the first day. At length we were able to give our full care to the prime object of our visit—the superb structure which has been erected in the Champs Elysées, for the exhibition of the products of the industry of all nations.

The *Palais de l'Industrie*, as it is called by an inscription on its own front, is a substantial oblong building, having a double row of windows along each side, and a vaulted roof of glass. The principal entrance is in the centre of the north side, where it adjoins the carriage-way of the Champs Elysées. At the east end, outside, is erected a bronze equestrian statue of the Emperor.

On the south side, connected by a raised gallery over the Cour la Reine, is a much longer, but perfectly plain building, for the show of machines and other articles of a cumbrous nature. At the distance of half a mile to the west, is a third and detached building, for the exhibition of articles in the Fine Arts from all nations. Such are the material arrangements. You pay five francs (4s. 2d.) for admission to the first two buildings, and an equal sum for admission to the third; so that, when you have provided yourself with catalogues, you find that a day in the Exposition costs you the greater part of a pound sterling. On Sundays, if your English feelings can bear the profanity and the *profanum vulgus* together, you may go over the whole for four sous—that is, twopence.

On entering, we found something greatly different from the exciting bewilderment of the Hyde Park Exhibition. The building being not more than half the length, and capable of being taken in at a glance, we lose that poetry of indefinite space which gave such a charm to the Crystal Palace of 1851. The suggestion of the nationalities by flags comes here less prominently before the eye. The central line of large objects, which formed so gallant a row in our own original house of glass, is here comparatively lost in the greater breadth. Finally, and above all, whether from the high price of admission, or from a disposition to wait till the collection is more complete, there was here no crowd, nothing but a mere handful of people mixing with the numerous groups of carpenters and glaziers engaged in fitting up the stands and cases. Hence, you scarcely felt as in a public place at all. One seemed to be merely looking over a piece of work in progress. Perhaps there is a greater and more hopeless want about this Paris exhibition of the industry (and sight-seers) of all nations—that it is not the novel and original scene our Crystal Palace was. Does not every one who saw that wonderful place, acknowledge that there was something about it quite peculiar, and which, no matter under what circumstances of additional splendour, could never in this generation be repeated?

When it is known, however, that articles had, up to 12th May, come from 9237 French, and 8742 foreign expositors, and that a large proportion of these were already placed, it will be understood that the house, far from complete as it was, yet presented such a show as it would take no small time to inspect thoroughly. We could not attempt anything like a critical inspection; but we saw enough to give rise to a few general remarks. Among the French articles, occupying one entire side of the ground-floor, and nearly an equal proportion of the galleries, it seemed to us that the silks of Lyon, the shawls of Nîmes, the porcelain and crystal products, and generally all objects contributing to personal and domestic decoration, were of an excellence unapproached in our country. The silks and velvet stuffs particularly arrested our attention from their extreme richness and beauty. In the laces of Brussels, there was fascination for the entire corps of the representatives of Eve. The English products of this kind did not strike us as remarkable; but there was a most pleasant surprise in finding that the lace-works of various kinds produced under the care of a charitable society in Ireland, were of a degree of merit relatively remarkable, and which might well give encouragement to other societies aiming, in remote situations, at obtaining a lucrative employment for females. In the British department, which was in tolerable completeness, there was an abundant show of every kind of linen, cotton, and woollen stuffs; and it was pleasant, at this distance from home, to recognise such well-known names as Chadwick of Manchester; Kelsall of Rochdale; Lupton of Leeds; Monteath, Crum, of Glasgow; Pease of Darlington; Baxter, Neish, Norrie,

of Dundee; Lees of Galashiels; and Beveridge of Dunfermline—all connected with the respective products of their several districts. Even from Shetland had a Mr Linklater sent some of the peculiar wool-shawls which have of late years been worked by the neat female fingers of that remote archipelago. It were endless to particularise the articles of attire, made and unmade, which England had sent to the World-show. We trust they will speak for themselves before the assembled nations, and help to open the way for that universal freedom of commercial intercourse by which the general interests of humanity may be so much advanced. At the same time, while we smile complacently at the obvious superiority of the Sheffield cutlery, and of English articles of utility generally, over the corresponding products of other nations, and entertain hopes of their making their way over the continent, let us not slight the many proofs given on our part of inferiority to the foreign workers, especially in the decorative arts. The many beautiful articles of furniture, bijouterie, and ornamentation generally, here presented from Belgium, from Austria, and from Berlin, ought to be an instruction and a stimulus to all who aim at even a respectable rank in the production of domestic elegancies.

The exhibition of articles in the Fine Arts, standing, as has been said, at a little distance from the principal building, is a congeries of galleries, in which space is distributed according to the requirements of the various nations. The best collections of France and other countries have been laid under contribution for this grand show; and when the reader is told that there are 5112 articles to be seen, he may have some idea of what a duty the visit will entail upon him. Entering the English Gallery between the busts of two much-esteemed friends, William Fairbairn and Joseph Whitworth, of Manchester—faces of manly worth and genius, which it is always delightful to meet with—we found a vast assemblage of what might equally be called old friends—namely, a large selection of pictures by the Landseers, the Millais, the Maclises, the Wards, and the Noel Patons, which have been most noted in our exhibitions during the last twenty years. One cannot but be satisfied with these works of the English school; yet it becomes apparent that few European countries leave us much to boast of in this department. The French, if we do not greatly mistake, are now painting in a better tone of colouring than they were accustomed to do a few years ago, as well as reaching a higher grade of sentiment. The great distinction that now remains, is the comparatively large size of their pictures, particularly those of a historical or scriptural kind—a consequence of the large spaces in churches and public galleries which they are allowed to cover.

Our peep at the Exposition accomplished, we tore ourselves away with reluctance from Paris, and groaningly plunged back into the murky atmosphere of London. We had had but a saunter amongst the street improvements of the French capital, but saw enough to put us a little out of conceit with our national custom of parliamenting and journalising over every obviously needful thing for twenty years before it can be done. There, a thing is seen to be desirable: the Emperor says the word, and it is done. How done, we cannot tell; but done it is, and then all are gratified. Here, need we say how many parochialisms have to be consulted and gained over? Verily, this atrocious system of centralisation is not without its good results; despotism itself is not quite an unmixed evil. There is often a great need for irresistible power in this world, and when guided by intelligence and good meaning to all, it becomes like a divine work. At present, for instance, it is fully proved amongst us that smoke, that poison and degradation of all our great cities, is a remediable evil: power alone is

wanting to enforce the means of remedy. Were we a pure republic, like America, we should be still worse off in all such respects. However, it is not alone in public matters that the French excel us. Look at the good behaviour of all large crowds of holiday-makers in Paris, in contrast with the brutal intemperance of an excursion-train in England or Scotland. Look at the *trottoirs* of the Rue St Honoré, washed clean every morning, in comparison with the hardened mud-paste of years on the pavements of some similar streets of London. Let us, dear countrymen, learn the first lesson in national self-improvement—that possibly our institutions and manners are not quite that model of all such things which we are but too apt to think them.

CHARLES KINGSLEY AS A LYRIC POET.

Few readers acquainted with the prose-writings of Mr Kingsley can be ignorant of the fact, that he is a true poet. The stream of his prose continually reveals the golden sand of poetry sparkling through it. In his pictures, taken from the many-coloured landscape of life, and in his transcripts of natural scenery, we feel that he has selected with the poet's eye, and painted with the hand of a poetic artist. But it is not as a writer of poetry in prose we purpose speaking of him now, so much as a writer of poems—in fact, as a lyric poet. The *Saint's Tragedy*, which was Mr Kingsley's first literary work, contained great poetic promise, both dramatic and lyric. It evinced a subtle knowledge of human emotion, especially of the mental workings and heart-burnings of humanity, wrestling with the views inculcated by Catholic ascetics. In addition to its dramatic interest and truthful delineation of character, there were scattered throughout it some drops of song, which, minute as they were, seemed to us to mirror the broad, deep nature of a lyric poet, even as the dew-drops reflect the overarching span of the broad, deep sky. In his prose works, Mr Kingsley has also printed several fine lyrics, the beauty and strength of which have been the subject of almost universal remark. *Alton Locke* contains a ballad, *Mary, go and call the Cattle Home*, which is akin in its simplicity to those old Scotch ballads that melt us into tears with their thrilling, wild-wailing music. In *Yeast* appeared the *Rough Rhyme on a Rough Matter*. It is the cry of a poacher's widow, the passionate protest of a broken heart against the game-laws—poured forth to the great silence of midnight as she is sitting near the spot where her husband was killed. It is distinguished by intensity of feeling, and a Dantean distinctness, not frequently met with in the sophistication of modern poetry. Few that have read it will ever forget it. The lyrics we have mentioned are probably all the reader will have seen of Mr Kingsley as a lyric poet: other pieces, however, have appeared in print. The chief of these were published in the *Christian Socialist*, a journal started by the promoters of Working-Men's Associations some few years since, which had but a small circulation and a brief existence. It is from these we select most of our specimens of our author's lyrical genius, although not all of them.

Mr Kingsley is the descendant of a family of fervent Puritans, and the spirit which lived in them still flashes out: the hot, earnest life which beat so impetuously beneath the armour of the Ironsides, still throbs in his writings. For example, here is a lyric worthy to have

been chanted by a company of the Puritan soldiers the night before a battle, and their loftiest feelings might have found in it fitting utterance:—

THE DAY OF THE LORD.

The Day of the Lord is at hand, at hand,
Its storms roll up the sky.
A nation sleeps starving on heaps of gold,
All dreamers toss and sigh.
When the pain is sorest the child is born,
And the day is darkest before the morn
Of the Day of the Lord at hand.

Gather you, gather you, angels of God—
Chivalry, Justice, and Truth;
Come, for the Earth is grown coward and old—
Come down and renew us her youth.
Freedom, Self-sacrifice, Mercy, and Love,
Haste to the battle-field, stoop from above
To the Day of the Lord at hand.

Gather you, gather you, hounds of hell—
Famine, and Plague, and War;
Idleness, Bigotry, Cant, and Misrule,
Gather, and fall in the snare.
Hirelings and Mammonites, Pedants and Knaves,
Crawl to the battle-field—sneak to your graves
In the Day of the Lord at hand.

Who would sit down and sigh for a lost age of gold,
While the Lord of all ages is here?
True hearts will leap up at the trumpet of God,
And those who can suffer, can dare.
Each past age of gold was an iron age too,
And the meekest of saints may find stern work to do
In the Day of the Lord at hand.

Is this not grand writing? The martial swing and the religious soaring of it make the soul rock to its rhythm.

The next quotation will illustrate how perfect is Mr Kingsley's mastery over the lyric as a form of expression, and with what consummate ease he has put a tragedy into three stanzas.

THE THREE FISHERMEN.

Three fishers went sailing out into the West,
Out into the West as the sun went down,
Each thought of the woman who loved him the best,
And the children stood watching them out of the town;
For men must work, and women must weep,
And there's little to earn, and many to keep,
Though the harbour bar be moaning.

Three wives sat up in the light-house tower,
And trimmed the lamps as the sun went down,
And they looked at the squall, and they looked at the shower,
And the rack it came rolling up ragged and brown!
But men must work, and women must weep,
Though storms be sudden, and waters deep,
And the harbour bar be moaning.

Three corpses lay out on the shining sands
In the morning gleam as the tide went down,
And the women are watching and wringing their hands,
For those who will never come back to the town;
For men must work, and women must weep,
And the sooner it's over, the sooner to sleep—
And good-by to the bar and its moaning.

This is a true ballad. It is clearly conceived, clearly finished, simply worded, and it contains neither metaphor nor conceit. These two lyrics alone will amply shew that their author possesses the fire and force, the cunning art and the beauty of expression, of a lyrical master—in addition to which qualities, his Muse has

at times a wondrous witchery and most subtle grace. Some of his dainty little lilt of song are so full of melody, they sing of themselves, which is the rarest of all lyrical attributes. They remind us of the sweet things done by the old dramatists, when they have dallied with airy fancies in a lyrical mood. Here is one:—

SONG.

There sits a bird on every tree,
With a heigh-ho!
There sits a bird on every tree,
Sings to his love as I to thee;
With a heigh-ho, and a heigh-ho!
Young maids must marry.

There blooms a flower on every bough,
With a heigh-ho!
There blooms a flower on every bough,
Its gay leaves kiss—I'll shew you how:
With a heigh-ho, and a heigh-ho!
Young maids must marry.

The sun's a groom, the earth's a bride,
With a heigh-ho!
The sun's a groom, the earth's a bride,
The earth shall pass—but love abide,
With a heigh-ho, and a heigh-ho!
Young maids must marry.

We conclude our quotations with a brief strain of pathetic minor music, so like the tenderness of some Scottish music, which must have been struck out of the strong national heart, like waters out of the smitten rock, through rent and fissure. These eight lines bring out another quality of the lyric poet—that of suggestiveness—the power to convey a double meaning—to make a sigh or a sob speak more than words—to hint more than can be uttered—to express the inexpressible by veiling the mortal features, as did the old Greek artist:

The merry, merry lark was up and singing,
And the hare was out and feeding on the lea,
And the merry, merry bells below were ringing,
When my child's laugh rang through me.
Now the hare is snared and dead beside the snow-yard,
And the lark beside the dreary winter sea,
And my baby in his cradle in the church-yard,
Walteth there until the bells bring me.

If these specimens are not sufficient to prove that a powerful lyricist is among us, we do not know what evidence would be necessary. 'Tell Mr Kingsley to leave novels, and write nothing but lyrics,' said one of our greatest living writers to us the other day, when we shewed him some of these songs. Often has the distinguished Chevalier Bunsen, in speaking of the song-literature of Germany and its influence on the people, urged Mr Kingsley to devote his powers to becoming a Poet for the People, and a writer of songs to be sung by them. England has no Burns, no Béranger, not even a Moore: she waits for her national lyricist. Although not as yet, perhaps, thoroughly tried, we know no man who appears to be so fittingly endowed to ascend into this sphere of song, that is dark and silent, awaiting his advent, as Mr Kingsley. He is an intense man, large in heart and brain, a passionate worshipper of truth and beauty. His heart has a twin-pulse beating with that of the people; his song has a direct heart-homeliness, and is that of a singer born. The verses we have given, be it remembered, do not constitute the choicest picked from a larger quantity: they are the most of what we have seen, and are taken as they came. We claim for them the rare merit of originality: there is no echo of an imitation, no reverberation of an echo. The melody has a bird-like spontaneity. It will be found that each repetition serves to increase their beauty.

Observe, too, how essential everything is that belongs to them: there is nothing accidental. Mr Kingsley has the self-denial to reject all that is superfluous in thought or word, which is a most rare virtue in a young poet, and without which no one can ever become a writer of national songs. He has also acquired the young writer's last attained grace—simplicity. Many of our young writers seek to clothe their thoughts all in purple words, thinking thus to become poets. A man might just as well think of becoming king by putting on the royal purple.

KARL HARTMANN:

A STORY OF THE CRIMEA.

IN FOUR CHAPTERS.—CHAP. II.

THE *Sancy Gipsy* got away in first-rate style: she was evidently a racer; and Joel Brystone, the skipper, was one of the most skilful and experienced seamen of New York. The voyage had at anyrate commenced auspiciously. After patrolling the deck in a state of misty excitement, which for two or three hours neutralised emotions of another kind, I was observed by Captain Brystone to catch wildly at the mizzen-ratlines, the region about my lips assuming at the same moment a hue of yellowish-white; whereupon I was forthwith handed below, and laid out in my sleeping-berth. I don't think my sighs and groans ran much upon dear Ruth during the following six or seven days and nights, but her image returned in undiminished lustre and freshness with the restoration of my mental and bodily faculties, and I silently pledged her over and over again in joyous bumpers, after the very first dinner I sat down to at sea. By that time, we had made the Atlas Mountains on the Morocco coast; and the wind continuing favourable, the *Sancy Gipsy* was soon slipping through the Straits of Gibraltar, towards the Mediterranean, where we at once became intermingled with the tide of war sweeping eastward to drive back the legions of the czar. Specimens of the whole art and range of ship-craft—from the swift, stupendous screw line-of-battle-ship to the slight and sluggish sailing transport—passed or was passed by the *Sancy Gipsy* during the remainder of the voyage, all full of red and blue soldiers, or freighted with the dumb and equally indispensable instruments of mortal conflict; the red cross and tricolor floating proudly from the masts; the national airs of France and England resounding from the crowded decks of the coalesced armadas.

'What think you, Mr Hartmann,' said I, early one morning, as we were both intently watching the huge *Himalaya* sweep past with the Scots Greys on board, their band playing *Partant pour la Syrie*, in complimentary recognition of *God save the Queen*, indifferently performed by the amateur musicians of a French mail-boat from Malta—'what think you of the stability of this, but a few years since, impossible alliance of the two great Western nations? According to some of the more solemn and second-sighted of the quidnuncs on our side the Atlantic, it amounts to a redistribution of the forces of Europe, not only subversive of the balance of power in the Old, but full of menace to the peace of the New World.'

'It is an alliance,' replied Hartmann, 'dictated by the awakened common sense and the permanent interests of the two nations, and depending for permanence, therefore, neither upon princes nor parchments. As to its menacing America, that is all bosh! unless, indeed, the United States should be conceit-crazed enough to challenge civilised Europe to mortal combat in defence of sacred slavery; as the Muscovite has in vindication of red-handed violence and the precepts of Christianity: then, indeed— But I eschew prophecy.'

'As to conceit,' chimed in Captain Brystone, who was standing close by, 'I'll back the Britishers against all creation for that; and yet, with all their prancing and trumpeting about this war, they are setting about it, according to their own newspapers, like a parcel of old women, rather than men of sense and pluck.'

'There is a tinge of truth in that,' said Hartmann; 'but as, no doubt, your sagacity will have already suggested, military departmental deficiencies—the cankers of a long peace—will find a sharp and sure remedy in the experience of actual war.'

'That "long-peace" excuse,' persisted Brystone, 'won't do at any price; or how is it we never hear of such bungling mismanagement in the French and Russian services?'

'Because, my dear sir, they hold by the Napoleonic maxim—*qu'il faut laver son linge sale chez soi*; a rule there is much to be said in favour of. Still, I prefer, on the whole, unfettered, independent criticism, frequently savage and unjust as it may be towards individuals. Sir John Moore is a notable instance in point—the most furiously abused, and one of the ablest generals England ever sent forth. But it is time to see about breakfast, I think.'

'That's a feller, now,' remarked the captain, as Hartmann disappeared below, 'that would take some time to correctly post up. I agree with you, however, Master Henderson, that he is a Britisher, hail from wherever he may.'

We were becalmed for nearly a week in the Mediterranean, save for a brief land-puff now and then; and the days being intensely hot, Hartmann and I, the only idlers on board, used to take our deck-exercise after sunset, he often reading scenes of plays, or snatches of poetry aloud, the brilliance of the night enabling him to read the smallest print with ease. Suddenly breaking in one evening upon his favourite pastime, I said: 'What sort of a man is the Arthur Dalzell said to be dying at San Francisco?'

'What sort of a man is the Arthur Dalzell said to be dying at San Francisco,' quietly replied Hartmann, folding down the page he had been reading, and closing the book: 'well, in person, well-looking enough, and about my own height and age; in character and disposition, a mingled yarn of good and evil—the evil, as I think, greatly predominating.'

'Come, that's candid, at all events.'

'You must think so, believing as you do that I am Arthur Dalzell.'

'Ha! How did you infer that?'

The man smiled, and taking me in a patronising way by the arm, said: 'My young friend—for a friend I am determined to make of you—that ingenuous face of yours can be read by duller eyes than those of Ruth Garstone. Nay, don't be foolish! You naturally wish to know something of your Aunt Viola's husband—Arthur Dalzell. Here, then, in a few rough strokes, is the man's moral picture in little:—Dalzell is a soldier, daring by temperament, a generous fellow too, from the same prompting. He is not thought to be a hard or cruel man—certainly, he would not strike a woman or a child; yet he has abandoned his wife and daughter for years, in order that he might be more free to follow the adventurous, vagabond life he loves. Altogether, he is a man of ardent impulses, not without some pleasant, perhaps good qualities, but utterly destitute of governing principle. Nay, I verily believe,' continued Hartmann with strange vehemence, 'that although he does love, always has loved his wife—and monster, indeed, must he be, did he not love that gentle long-suffering woman—yet, I say, I verily believe that there mingles with his fervent longing for reconciliation a base hope, that in the event of his at least possible recovery, he may revel once more in riches by participation in the large sum which, by the death-bed remorse of the man by whom her husband was

ruined in the matter of some government contracts, has lately devolved to Mrs Dalzell.'

'Did you inform Mrs Garstone of the legacy you speak of?'

'Yes, but she seemed not to heed the information, although the bequest is comparatively a large one: silver rubles amounting to nearly five thousand pounds of your money.'

'And you are not sure that the vicious maniac you describe is really dying after all?'

'Well, yes, I think he is. We all are, for that matter; but with Arthur Dalzell, I cannot doubt that the wine of life draws near the lees. I agree with you also, that he must be at least partially insane.'

We were silent for some minutes, and then I said quickly: 'Am I right in supposing that you are personally known to my aunt, Mrs Dalzell?'

'I know Mrs Dalzell well; and she knows me, much too well: I mean, that her esteem can hardly equal her knowledge of me. Of less consequence, you are aware, inasmuch as any business I may have with her can be transacted by proxy—you being that proxy. And if, by chance, I should find myself in her presence, she, unhappy lady, will not, of course, be cognizant of that fact.'

Our conversation, after this, turned upon indifferent matters, and it was not long before we retired below, and turned in for the night. Nothing of importance occurred till the *Saucy Gipsy* was safely moored in the Golden Horn—not much then. The cargo was speedily disposed of; all matters of business satisfactorily adjusted; and I was ready to address myself seriously to the fulfilment of my good Aunt Martha's chief behest. But no step could, of course, be taken in the absence of Karl Hartmann, who had disappeared the very day we arrived at Constantinople, after making a bold draw upon the funds in my possession, and promising to return in ten days at the very latest. That time expired, and still no Mr Hartmann was to be seen or heard of; and I was becoming ferociously impatient, when a letter was placed in my hands by a clerk in a Greek house. It informed me that—but as the letter is before me, and sufficiently concise, I had better simply copy it:

'YALTA, CRIMEA, August 18, 1854.

MY DEAR SIR—This note will reach you by a sure hand, and will, I trust, decide you upon coming here without delay. I have obtained exact intelligence of (here there is a blotted erasure) your Aunt Dalzell and her daughter, still, as ever, the chosen companion of calamity—Viola, I mean, not Marian—completely blind, I am told; total eclipse—from cataract, it is said. My position here is a peculiar, and rather menacing one, though, after Ingraham's exploit at Smyrna, I should think my certificate of American naturalisation would pull me through. Perhaps not. There are grave circumstances, which I will explain when I see you. By the by, Prince Menschikoff, who commands here, is making tremendous preparations for the prompt carrying out of his proclaimed intention to drive the red and blue devils now at Varna into the sea, should they dare pollute the sacred soil of Russia with their profane footsteps, or hoofsteps; an announcement which, being indorsed by a unanimous and orthodox clergy, is received with undoubting faith by all here; even by the poor Tatars, who, like the devils—not the aforesaid red and blue ones—believe and tremble. There is one infidel exception—your obedient servant,

KARL HARTMANN.

N.B.—The roadstead here is a safe one at this time of the year, and I think the *Saucy Gipsy* might pick up a profitable cargo of morocco leathers and lambskins just now.'

I determined to start at once; and first giving the necessary directions to Captain Brystone, I hurried off

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to Pera with my letters of especial introduction to Mr Brown. I found our excellent representative at home, and sufficiently at leisure to listen to a brief exposition of my purpose in visiting the Heracleian Chersonesus.

'A simple affair enough in itself,' he remarked; 'but you should, I think, keep a wary eye upon Master Hartmann's movements. A note I will give you to Prince Menschikoff, with whom, when here, I had something more than an official acquaintance, will enable you to do so effectually.'

I thanked Mr Brown for his kindness, received the all-important note, and sailed the next day for Yalta with a light heart and a spanking breeze.

By this time the steam and sailing vessels required for the transportation of the British and French troops were assembled before Varna—a motley, multitudinous fleet, numbering from 400 to 500 vessels. We passed them on the 4th of September, at about three leagues to windward; for, luckily for that crowded mass of shipping, the wind, half a gale, was blowing off the shore. The embarkation was, we saw, vigorously progressing to the sound of martial music, exuberant cheering, and not unfrequent cannon-fire—in enforcement, no doubt, of the orders signaled by the fluttering bunting of a screw two-decker, bearing a rear-admiral's flag. By sun-down, we had dropped the whole of the vast armament, with the exception of the top spars of the largest men-of-war: these presently disappeared in the gathering gloom, and not a sail was visible in any other quarter save those imaginary ones which landmen such as I conjure up in the distance out of flashing foam-horses chasing each other over a wild waste of sea.

'Steam,' I remarked to Captain Brystone, as he shut up his glass after a long scrutinising look towards every point of the compass—'steam has, I daresay, greatly increased the facilities for such an enterprise; still, it is quite clear, even to my unskilled judgment, that the gigantic embarkation going on yonder is a terribly hazardous affair.'

'That's a fact, Master Henderson,' rejoined the captain; 'and the boldest Britisher there would think twice of such a venture if the Russian men-of-war, instead of skulking off to hide themselves at Sebastopol, shewed they meant to have a downright shindy with their enemies at sea.'

'You cannot suppose the Muscovites would have a chance with the British fleet in a sea-fight, not to reckon the French!'

'Not the ghost of a chance, in a regular sea-fight, I am quite sure; but that's not what I'm speaking of. I have seen service with a convoy before now; and I tell you, Master Henderson, that let the men-of-war look them up as smartly as they may, that thundering fleet of transports won't have been at sea six hours, before they are a straggling, higgledy-piggledy line, leagues in length and width. Ten or a dozen swift steam-frigates, or half that number of such frisky fellows as the two-decker we saw cutting about yonder, well placed and smartly handled, would find opportunities of dashing in amongst them; scatter death and destruction on all sides, create the wildest confusion, and be off again, especially at night, before the war-ships could interfere to any effectual purpose. Just fancy the heavy metal of a frigate or a two-decker crashing through the brown paper-sides of merchant-vessels chock full of soldiers—transports running into one another to get out of the way—and ask yourself what sort of a plight the army would be in to effect a landing in an enemy's country, after two or three turns at such a game as that!'

Having thus delivered himself, Joel Brystone turned to the mate, and ordered him to call the hands to shorten sail, and make all snug for the night, as a 'sneezer' was evidently coming on. He himself took the wheel. I dived below out of the way, and was

soon, spite of creaking timbers and a roaring sea, in a sound sleep, and dreaming of—

'Precisely.' And that capital guess of yours suggests to me that Ruth Garstone's pretty face was not more changeable in its aspect of smiles and frowns, candour and coquettishness, than is the equally capricious Euxine in passing from wildest fury to gentlest calm. The morning shewed no trace of the previous night's gale, save in the slowly subsiding wave-swell, through which the *Saucy Gipsy*, feebly sustained by a light, fitful breeze, helplessly pitched and rolled. The wind freshened about noon, continued fair; and early the next morning the low flat shore of Kalamita Bay, on the south-west coast of the Crimea, close by the northern horn of which nestles the old Tatar town of Koslov, now Eupatoria, was visible from the deck. It was still far away, however, on our larboard-beam, stretching southward in sinuous outline to Cape Cherson, and backed up by the hill-region of the peninsula, which rising precipitately on the south, reaches inland as far as Simferopol, whence a vast steppe or plain extends in unbroken sterility to Perekop. As the day advanced, Eupatoria and the villages along the coast lit up into clearer distinctness—the hill-tops to the south and east sparkled with sun-fire, and by and by we could discern, through the glass, numbers of country-people busy getting in the harvest, with the help of camels and bullock-carts. Everything betokened peace, quiet, security, utter ignorance, or utter carelessness of the storm of war about to burst upon them. Not a soldier was to be seen, unless some fellows riding about upon ponies, with what to us looked like slender rods, borne in an upright position, or across their saddles, were lance-armed Cossacks. This strange apathy or disdain called forth numerous, and far from complimentary, comments from Joel Brystone, especially after we opened up Sebastopol, and he had counted from the mast-head the numerous fleet skulking idly there. 'A tremendous strong fortress, though, this Sebastopol!' he added, 'as that fellow Hartmann said, and about the only sensible thing he did say: not a place to be taken by the collar even by the Western Colossians.'

'Western Colossi, was it not?'

'Colossi or Colossians,' rejoined the captain, 'it comes to pretty much the same thing, I believe—which is, that the British and Frenchers will find Sebastopol a cussed hard nut to crack.' So saying, and feeling, I could see, a little pouty at having the correctness of his language questioned, the commander of the *Saucy Gipsy* walked away.

The following day, the *Saucy Gipsy* dropped her anchor in Yalta roadstead; and after the brig had been boarded and ransacked by an inferior crew of officials, we were visited by a sort of amphibious officer, inasmuch as, although a seaman by profession, as he told us, he wore a soldier's uniform, and called himself Major Kriloff. A civil sort of person the major proved to be, after satisfying himself of the genuineness of our nationality, and the legitimacy of our purpose in visiting the czar's dominions. That civility grew instantly to graciousness when he was shewn the letter to Prince Menschikoff, with the wax impressed by Mr Brown's official signet. There would, he said, be some difficulty in obtaining an interview with his excellency, who was just then incessantly occupied in marshalling the imperial forces for the signal chastisement of the sacrilegious Allies of the Turk; but every consideration, consistent with the military and police regulations, would meanwhile be shewn to a gentleman officially commended to the prince by the representative of a great, friendly power. 'The delay will not be very long,' added the major; 'for his excellency will quickly finish with the audacious invaders should they, which I think doubtful, be mad enough to set foot upon Russian territory.'

Captain Brystone, who understood French very well, though he did not speak it, gave a sarcastic sniff at hearing this; and I assured the major there was little doubt that the Allies really meant landing in the Crimea, and shortly too.

'So much the better,' he briskly replied: 'they come to their graves!—though not in one sense, for we shall toss them like dead dogs into the sea,' added the gallant officer, tossing down a bumper of champagne emblematically at the same time. 'The French,' continued the major, kindling with the subject, 'the heroic children of the czar chased before them like sheep in 1812; and a very intelligent countryman of yours assures me, that the English soldiers will be panic-stricken at the mere sight of our invincible veterans!'

'A countryman of ours?'

'Yes; that is, a naturalised American, though a German by descent—a most intelligent person, I assure you. He has given me a lively description of your famous battle of New Orleans, where he tells me General Jackson, with only about fourteen hundred American militia, put to rout a whole host—upwards of twenty thousand English regulars—though posted behind walls of cotton bags! He himself was a very young drummer-boy at the time, and helped to beat the advance at the decisive bayonet-charge. His name is Karl Hartmann. Perhaps you know him.'

'Well!' exclaimed Brystone, as soon as he could fetch breath—mine was quite gone—and bringing his fist down upon the table with tremendous force—'well! if that don't bang Barnum, I'll be —.'

The major, not understanding English, evidently mistook the captain's words and action for a vehement confirmation of Karl Hartmann's bulletin of the battle, for he immediately said: 'I am happy to find you can corroborate my friend's statement. One of the most agreeable, gentlemanlike men I have ever met with is Karl Hartmann, and an ardent admirer of Russia and her glorious emperor. He has been confined to his hotel by a slight indisposition for the last five or six days, or I should have endeavoured to bring him with me; but as you, Mr Henderson, are going on shore with me, I shall have much pleasure in presenting you to each other.'

'Thank you, Major Kriloff; but Mr Hartmann and I are old acquaintances. I shall be very glad to see him, let me add.'

The major was delighted to hear that, and soon afterwards we landed in company on Yalta pier. Yalta is, or was, a favourite resort of the Russian families who during the summer visit the Crimea; and, previous to the entry of the allied fleets into the Black Sea, a steamer plied regularly twice a week between it and Odessa, touching at Sebastopol on its way. The town is partly built upon the plateau and western side of a rather lofty promontory, and runs considerably inland through a charming valley sheltered on each side by wooded heights. Many of the houses are built up the hillside in a kind of step-terrace fashion, the flat roofs of a lower tier forming a promenade to the tier above. The permanent inhabitants are, I believe, chiefly Russians and Greeks, though the Tatar element of the Crimean population—chiefly agriculturists, sullen, swarthy fellows, with high cheek-bones, flat spreading noses, and narrow, long, cunning eyes—were numerous enough about the streets; and now and then a woman of that race shuffled past, her features concealed by white cotton bandages. The main street was full of soldiers, drawn up in heavy marching-order; and of course Major Kriloff was inexhaustibly voluble in his admiration of their fine soldierly appearance—an estimate which, though I did not endorse, I took care not to contradict; and the patriotic monologue terminated only at the door of the principal hotel, where temporarily resided Mr Karl Hartmann, and where the

courteous major left me, after readily promising to return and dine with me and '*ce cher Hartmann*,' whose appetite, it appeared, was not in the slightest degree affected by the ailment which confined him within doors.

Karl Hartmann's indisposition, as I suspected, was a mere pretence, except in so far that an unexpected incident had in some slight degree shaken his steel-strung nerves.

'The truth is, my dear Mark,' said he, with an effort at familiar frankness, as soon as we had shaken hands—'for in future there must be no concealments between you and me—that I chanced to meet a fellow the other evening who, I thought, was a thousand miles away. Had he recognised me as I did him, and my revolver had not put in effectual bail for its owner, as I daresay it might have done, I should have been strung up in a trice to the nearest tree; or, had he chanced to be in a very gracious mood, have been despatched to the other world with military honours—*videlicet*, a close volley and a dozen bullets through my head.'

'Nonsense! This must be a reckless, extravagant jest, like your drummer-boy doings at the battle of New Orleans.'

He laughed out, the light merry laugh of a light-hearted merry boy. 'Krilloff has told you of that already, has he! Well, he is one in authority here: it was desirable to win his favour, and I have succeeded in doing so to admiration, by simply humouring his prejudices. But as to the *rencontre* I was speaking of, and its possible consequences, all that is true as doom.'

'What crime, then, have you committed, or been charged with?'

'None whatever! I mean no moral crime—one against the military code only. It thus fell out: You are aware that I once held the czar's commission?'

'No; but I have heard that Dalzell did.'

'I served in the same regiment with Dalzell, and he and I were not only bosom-friends and brother-officers, but, in conjunction with one Basil Ypsilanti, a wealthy Greek, brother-contractors. We were stationed in Bessarabia at the time, and both knowing something of military engineering, we, after much ado, obtained a contract for some extensive works connected with the defences of Ismail. The affair wound up disastrously, Ypsilanti, whose name did not appear in the business, having cheated us outrageously in the purchase of material. This we were as certain of as that we had life and breath, but legal proof thereof was difficult; and one of the consequences was, that General Korkasoff, meeting me one day about a mile outside of Ismail, called me, after asking a few questions, "*un sacré escroc*." He was on horseback, and accompanied by an officer of his staff—the man I met the other evening. I also was on horseback. Now, in my mildest mood I could hardly have tamely borne being called a cheat; but at that moment my brain was in a whirl of fiery excitement from wine and loss by play; and the offensive epithet had scarcely struck the general's lips, when I answered it by a fierce stroke across his face with a stout riding-whip, followed by a shower of blows, which, aided by astonishment at the incredible audacity of such an attack, deprived him of all power of resistance. The aid-de-camp was at first equally stupefied and paralysed, but presently rallying his startled senses, he drew his sword, and rode at me, shouting, as he did so, to an infantry picket not far off. I parried his thrust, and returned it by a blow on his head that must have set it ringing for some time, and to divers tunes; then set spurs to my horse, and, being capitally mounted, went off like the wind. I escaped, and found my way to America, where I read in the *Invalides Russe* that, as usual with deserters, I had been tried in my absence by court-martial, and condemned to death, "*mort infamante*," which in the vulgate is *sus. per col.*

You think, no doubt,' he added, 'that I must be crazy to come here under such circumstances; and perhaps it was an act of madness; but something, I thought, might be trusted to the fact, that the corps to which I belonged is now stationed in Poland; to the change produced in my appearance by difference of years, dress, the absence of beard, moustaches, and so on. Besides, the inveterate gamester ever delights in *le grand jeu*, though the stake be his own life.'

'Yes, I can understand that, when the possible gain is in some degree commensurate with the possible loss; but in the present case, you hazard your life for positively nothing—as regards yourself.'

'May be so; but the cards are dealt, and the game must be played out. And now to other and more pressing topics. Gabriel Derjarvin, half-Tatar, half-Russ—Ypsilanti's executor and trustee—is, I find, a much greater rascal than I had supposed, and I allowed a wide margin too. He will give us plenty of trouble, if nothing worse. He is now, I believe, at Simferopol; and there or elsewhere we must seek, find, and try conclusions with him. Your aunt, Mrs Dalzell, and her daughter, are lately gone, he tells me, and by his advice, to reside for a time in Sebastopol.'

'Sebastopol! To a place about to be besieged—perhaps stormed!'

'An entirely absurd supposition, my good young man,' replied Hartmann, with an explosion of bitter mirth. 'A grand council of war has been held, at which the programme of the coming campaign has been definitively settled. It runs thus: The Allies are to be permitted to leave the safe security of their ships, to find their presumptuous march arrested before one of the formidable positions in the vicinity of Sebastopol, whence hurled back, discomfited, overthrown, amazed, by the Russian hosts, all those who escape the sword will be drowned in the sea; a modern illustration, according to a printed address, signed by the archimandrite of Odessa, of the catastrophe which in ancient times overtook swine possessed of devils. Of course, the unsavoury similitude offends your British olfactories—well, on the father's side at any rate, if not on the mother's—but it is not the less certain for all that—that dinner is served, and Major Kriloff impatient to fall to. Come along, Master Henderson.'

In the forenoon of the following day, Karl Hartmann, Major Kriloff, and I, set out for Simferopol, Menschikoff's head-quarters, in a *tarantas*—a two-horse vehicle, consisting of a coupé and a box-seat. I was not quite sure whether the major looked upon us as companions or captives—possibly as both; but it was very plain that he did not intend to lose sight of me till the genuineness of the letter to the prince had been verified. He was exceedingly gracious, however; and travelling in the Crimea under his authoritative guidance, was much more expeditious and agreeable than it might have been had we journeyed alone. And a delightful drive it was, through one of the most placidly picturesque regions it is possible to imagine: fertile valleys, shut in with finely wooded heights; one—that of Baidar, some ten miles long by five in width—cultivated like a garden, and waving with luxuriant crops of wheat, rye, millet, tobacco, interspersed with plantations of vine, mulberry, quince, pomegranate, apple trees: mountain table-lands, or plateaux, called *gailas* by the Tatars, rich in summer-pasture, and covered with long-tailed sheep, buffaloes, camels, and horses. The numerous Tatar huts, of lime-washed clay, are for the most part built amidst patches of mulberry, walnut, or other fruit-trees. At that season of the year, green tobacco-leaf was hanging to dry upon rough trellis-work in front of most of them. Upon several of the flat roofs, Tatar girls were winnowing corn; and other industries—turning, for example, with a bow and string—are pursued after a like primitive fashion. The day was splendid, and the sun-lit

panorama of valley, mountain, forest, river, was further enlivened by the glittering arms and accoutrements of numerous bodies of military, horse, and horse-artillery chiefly, galloping past on the direct road, or glancing across a distant opening in the forest—all hurrying westward, to share in the coming triumph of the Russian arms. At Baghtsche-serai, the ancient residence of the Tatar khans, where we slept, or rather should have slept, if permitted by the swarms of fleas, cockroaches, with a sprinkling of scorpions, domiciled hereditarily in the bed-rooms, the same excitement and exultation appeared to pervade the soldiery temporarily halting there; whilst the scowling looks of the Tatar habitants seemed to express a savage hope, controlled by equally savage servile fear. Major Kriloff introduced us to a party of Russian officers, who were all, and quite naturally, brimming over with indignation at the threatened insult to the sacred soil of Russia. Their eager talk and questioning referred not so much to the French, who, in connection with the campaign of 1812, they affected to hold very cheap, as to the English, with whom they had not yet measured swords; and certainly Hartmann fooled them upon the subject to the top of their bent. His precious battle of New Orleans, which always stirred my bile, by the ridiculous version it gave of a really creditable affair, absurdly overpuffed as it may have been by Old Hickory's partisan admirers, was repeated over and over again, with never-ending variations; and by midnight, when the reckoning for champagne—towards which they would not hear of our contributing a cent—must have reached a handsome figure, it was firmly impressed upon every confused brain there that the English of these days, though still formidable at sea, were as inept as Chinese at land-fighting, and would certainly scamper off at the first flash of the Russian bayonets. Hartmann was in his glory, and concluded the evening's entertainment as follows:—

'I think you hinted just now,' said he, confidentially addressing the only Russian officer remaining in the room—and who, it had struck me, was very young looking for his rank—'I think you hinted a short time ago that your uncle, being a general of division, you could have your gallant Arofsky regiment placed in whatever part of the field seemed likely to yield the thickest crop of laurels?'

'I have little doubt I could.'

'In which case,' continued Hartmann, 'I can give you useful counsel: no thanks, my dear Colonel Softenuff, I'—

'Puhmpenuff'—this is no word-play of mine; Puhmpenuff is a well known Russian surname—'Puhmpenuff, if you please, Monsieur Hartmann.'

'Ah, oui, Puhmpenuff—a highly distinguished name, it struck me at first.'

'One of the most distinguished names in the empire,' said Puhmpenuff, stroking his moustache complacently.

'And very deservedly so, I have no doubt,' rejoined Hartmann; 'but, returning to the counsel or advice I have to give you. It must, to begin with, be clear to you that my opinion of the qualities and composition of an English army is entitled to respect; I, who, when a mere boy, assisted—so far as vigorously beating the *pas de charge* can be called assisting—a mere handful, comparatively speaking, of my countrymen to rout and pepper twenty thousand English red-coats, intrenched though they were behind ramparts of cotton-bales.'

'Thirty thousand, you said just now,' remarked the colonel.

'Did I? Well, I daresay there might have been thirty thousand; but the truth is, they ran so fast that it was difficult to ascertain their numbers with more than approximate accuracy. To proceed, however. Although nineteen out of twenty of the British soldiers you will soon be in face of have never in their lives heard a gun fired in anger, and won't stop when they do to hear a

second, there are, you must bear in mind, two or three regiments which, as a matter of prudence, should be avoided. Not—understand me, Colonel Puhmpenuff—that I for a moment believe a soldier of your heroic name and chivalric character cares one straw how brave or how numerous may be the enemies opposed to him; but it is your duty to economise the blood of your valiant Arofskys, prodigal as you may be of your own.

'Certainement. There I agree with you entirely, Monsieur Hartmann.'

'The regiments I allude to are those that have seen service in India'—

'India!' interrupted the colonel—'I know—we shall go there some day.'

'To be sure you will, and back again!' exclaimed Hartmann with a burst which I saw rather startled the colonel, wine-wildered as he was. 'You and your Arofskys are just the fellows to do that; and here'—tossing off a glass of champagne—'here's wishing with all my heart and soul that I may live to be there, and give them a hearty welcome when they do go. But I shall never finish if you interrupt me so. The question remains, how to discover which are those India regiments, and I confess I hardly know how that is to be done. There is, however, one plain course to pursue, which will answer the purpose of that knowledge. You must pit the Arofskys against the show-soldiers who never go abroad, and have no more fight in them than hares. They are brigaded together, I see by the papers, and you cannot fail to recognise them. Half of them, and the tallest fellows—six feet of bad stuff every one of them—all wear bear-skin caps; the others wear petticoats.'

'Peticoats! *Allons donc!*'

'But I say they do; and not so much as a pair of drawers beneath! There is hardly a pin's difference between the bear-skin caps and them, but I should recommend the petticoats for choice. Good-night, Colonel Puhmpenuff. Should you not,' added Hartmann, 'be able yourself to profit by the hint I have given you, impart it to such of your friends as may be able to do so, with my compliments, and if they don't ever afterwards remember me in their prayers, they are not the men I take them for—Ha! Major Kriloff! you here!'

I was even more startled than Hartmann at suddenly confronting that officer, as we rose from our chairs. He had, I was sure, been silently standing there some time; had heard, and his lowering visage convinced me, appreciated Hartmann's mocking persiflage. He betrayed neither anger nor suspicion by words—contenting himself with telling a lie instead: 'I have this moment stepped in to remind you both that we start at dawn of day. Good-night, again, messieurs.'

'Well, Mr Hartmann,' said I, as soon as we were alone, 'that reckless, glib tongue of yours cannot be governed, it seems, even by the menace of a halter, or a levelled row of muskets! For the future, you may be sure that Major Kriloff will not only be our jailer, but an indefatigable spy over all our motions.'

'Possibly; but don't be angry. I would not, and luckily I cannot, compromise you; and I am, as you say, reckless—mad! or nearly so. In fact, Mark Henderson,' he went on to say, 'I have a strong presentiment that, do what I may, I must lose the game—the game of life—I am playing here. Well thought of!' he added, taking a small sealed packet of papers from his breast-pocket. 'You had better at once take charge of these papers. They will inform you of everything it is necessary you should know relative to your Aunt Viola and myself; the understanding being, remember, that you do not break the seal of the envelope whilst I am alive and at liberty. And now, let us try to sleep.'

NICHOLAS SOLD.

During an interview which Martineff, the comedian and mimic, had succeeded in obtaining with the Prince [Volkhonsky, high-steward], the emperor walked into the room unexpectedly, yet with a design, as was soon made evident. Telling the actor that he had heard of his talents, and should like to see a specimen of them, he bade him mimic the old minister. This feat was performed with so much gusto, that the emperor laughed immoderately; and then, to the great horror of the poor actor, desired to have himself 'taken off.'—'Tis physically impossible,' pleaded Martineff.—'Nonsense,' said Nicholas: 'I insist on its being done.' Finding himself on the horns of a dilemma, the mimic took heart of grace, and with a promptitude and presence of mind that probably saved him, buttoned his coat over his breast, expanded his chest, threw up his head, and assuming the imperial port to the best of his power, strode across the room and back; then, stopping opposite the minister, he cried, in the exact tone and manner of the czar: 'Volkhonsky! pay Monsieur Martineff one thousand silver rubles.' The emperor for a moment was disconcerted; but recovering himself with a faint smile, he ordered the money to be paid.—*Harrison's Notes of a Nine Years' Residence in Russia.*

ANCESTRY OF WASHINGTON IRVING.

John of Irwyn had landed possessions in the parish of Holm, in Orkney, in 1438, when the county was still an appanage of the crown of Denmark and Norway. The Irvines of Sebay are very frequently mentioned in the times of Robert and Patrick Stewart, Earls of Orkney, and suffered very severely from the outrages of these rapacious nobles. They became extinct in the direct male line, *tempore* Charles I.; but one collateral branch had immediately before settled in the island of Sanday, and another, the Irvines of Gairstay, in the island of Shapinsay. They lost the estate of Gairstay several generations back, and sank down into the condition of mere peasants, tenants of Quhome, where some of them reside at this day. I was there lately with Mr Balfour, the proprietor of Shapinsay, who pointed out the old and modest house at Quhome where was born William Irvine, father of Washington Irving. Is it not somewhat singular that Sir Robert Strange and the author of *Bracebridge Hall* can be almost demonstrated of the same blood? I guess, if Irving knew his pedigree could be traced step by step up to John Erwyn of 1438, he would readily claim and vindicate his Orcadian descent.—*Dennistoun's Memoirs of Sir Robert Strange.*

'ROW, BROTHERS, ROW.'

Here is the scene of Moore's undying *Canadian Boat-song*, which he wrote on the fifth day of his descent of the St Lawrence from Kingston. Thirty-three years after he wrote this song, I had the pleasure of shewing Moore the original manuscript, which he had entirely forgotten. He had pencilled the lines, nearly as they stand in his works, in the blank page of a book which happened to be in his canoe, from whence he transcribed them at night. The sight of the original copy of these famous lines, recalling youthful days and happy associations, produced a great effect on the poet, who alluded in a touching manner to his passage down the rapids of life.—*Weld's Vacation Tour.*

RHUBARB MARMALADE.

Now that a supply of rhubarb is at hand, we present our readers with a recipe, which has been furnished us, and which we have had tested, and can therefore recommend, for making a delicious marmalade:—Pare and cut into very small pieces 2 lbs. of rhubarb; add 1½ lb. of loaf-sugar, and the rind of one lemon, cut very fine, and into very small pieces. Put the whole into a dish, or other deep vessel, and let it stand until next day. Then strain off the juice, and boil from half an hour to three-quarters; after which, add the rhubarb, and boil altogether ten minutes.—*Preston Guardian.*

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THE NAMING AND NUMBERING OF THE STREETS.—

A letter was submitted from Mr Francis Gelton, of 5, Bertie-terrace, inviting the serious attention of the Board to the inconvenience suffered by the public owing to the imperfect numbering of the houses in Leamington, and to the needless division of its thoroughfares, that are in reality single streets, into portions bearing different names. He also submitted for their consideration certain suggested alterations which appear, at least at first sight, calculated to remove a large part of the inconvenience of which he complained, without undue interference with the comfort, tastes, or even fancies of individual householders. As regarded the numbering of the houses, he found from an examination that no less than 553 families, or exactly one-half of those now in Leamington, occupied villas, lodges, and other houses described by individual names, and not by a number in the street in which they were situated. This irregular and most unmethodical system of classification could hardly be paralleled as to its relative extent in any other town in Europe; it was a cause of extreme perplexity to visitors, and of continual annoyance to residents, and was especially to be protested against in a place like this, where the streets were laid out with unusual regularity, and therefore could admit of being numbered with the greater ease. He had selected the names of twelve streets which appeared to him to be ripe for numbering, and which contained on the aggregate 251 houses undescribed by numbers. He begged to express a hope that the Board would make enquiries generally into this matter, and that wherever they found, it proper to do so, they would cause numbers to be fixed to the houses without further delay. The twelve streets to which he referred were as follows, together with the number of houses in the street known as so-and-so villa, and not by their number:—Beauchamp-terrace east, 10; Binswood-terrace east, 6; Binswood-terrace west, 5; Clarendon-street, Sherbourne-place, 15; Lillington-road, 7—22; Dale-street, Adelaide-road, 11; Holly-walk (lower), 10; Brandon-parade, 10; Holly-walk (upper), 19; Campion-terrace, 6—45; Leam-terrace, 25; Newbold-road (south), 28; Newbold-terrace, 22; Radford-road, 13; Eastnor-grove, 8; St. Mary's-road, 9—30; Russell-terrace, 29; Wellington-street, Church-hill, 18; total, 251. As regarded the names of the streets, their present needless multiplicity was conspicuous in the greater thoroughfares, as in the Parade, which included six different titles, and in the small streets which connected Warwick and Regent streets, and were prolonged upwards to South Parade, and downwards to Portland Place, the separate sections of these streets bearing, for the most part, different names. The proposal he submitted to their consideration was that the following 36 streets, terraces, places, &c., be combined into 13 streets, and that the superfluous 23 names be wholly abolished, within some reasonable time. He proposed that the name Dale-street should include the separate sections now known as Dale-street, Clarendon-place, and Ardennis-crescent; Windsor-street to include Augusta-place, Windsor-street, and Russell-street; Bedford-street to include Bedford-street and Tavistock-street; Grand-parade to include Lower-parade, Euston-place, Union-parade, York-terrace, and Lansdowne-place; Chandos-street to include Park-street and Chandos-street; Oxford-street to include Kenilworth-street and Oxford-street; Lillington-road to include Clarendon-street and Lillington-road; Regent-grove to include Regent-grove, Hamilton-terrace, and part of Brandon-terrace (the other parts in Holly-walk); Warwick-street to include Warwick-street, Waterloo-place, and Clarence-terrace; Lansdowne-crescent to include Lansdowne-crescent, Newbold-road, and Fontaine-villas; Regent-street to include Regent-street, Wellington-street, and Church-hill; Portland-place to include Milverton-hill and Portland-place; Coventry-street to include Coventry-street and Lillington-place. There were yet a few further remarks he would make on the naming of the streets. 1. South-parade absolutely required to be named afresh, for at present its title suggested a southerly position and a direction in continuation of the Parade, whereas its position was northerly, and was at right angles to the Parade. There was also a second South-parade situated south of the river. It would be easy to find another name; probably as its continuation up Campion Hill was to be called Leicester-street, "Leicester-parade" would be thought suitable. 2. It would be a convenience if those parts of Warwick-street and Regent-street that lie east of the Parade, were labelled Warwick-street east and Regent-street east; they would not need to be treated in any other respect, as separate streets. 3. By suppressing, as he proposed, the name of Lansdowne Place, the title of Lansdowne would be confined to the Circus, Crescent, and Terrace, all adjacent to one another. 4. Similarly by suppressing Clarendon-street (at the foot of the Holly Walk), the name "Clarendon" would be confined to the Square and Crescent, which were adjacent to one another. Finally, he would call the attention of the Board to the rareness with which the names of the streets were painted on their sides. Many important streets were entirely without these indications, and most of them were very ill supplied. The beauty and conspicuous appearance of the new iron labels invited a greatly extended use of them.—Mr BALLARD said many of the streets required fresh numbering and naming.—The CHAIRMAN suggested that the letter be referred to the Highways Committee, which was agreed to.

be adopted in carrying out the system of boarding out, deserted and orphan children in the Workhouse:—
 "The Guardians of the Warwick Union, anxious for the welfare of the children whom the failure of their natural protectors has thrown upon them, believe that they will best discharge their trust by placing the children with families in which they will learn habits of industry, frugality, and self-reliance, and be brought up in the fear of God and the practice of virtue. In accepting the charge of a child, the Guardians understand that you accept the following obligations:—1. That the child shall be brought up carefully in all respects as one of your own children.—2. That you will give special attention to the formation of habits of truthfulness, obedience, personal cleanliness, and industry, to the child's training (if a girl, in needlework, household work), and in the capacity of making him or her generally useful.—3. It shall also be your duty to see that the child attends the parochial or other school twice a day, also on Sundays when practicable, until the age of thirteen years, unless the Guardians sanction such child being put to work earlier.—4. You will also take care that the child shall attend church or chapel every Sunday.—5. The Guardians will pay the school fees, and such medical attendance as may be required; and they will also provide a suitable outfit of clothing, at a cost of £3, and after the expiration of three months, will give 6s. 6d. quarterly for keeping this outfit in good condition, and renewing it when necessary.—6. The Guardians will pay until the age of thirteen years, 3s. per week, and after that age 2s. per week; exceptional cases to be decided according to their merits by the committee.—7. The Guardians reserve to themselves the right to withdraw the child when they see fit."

WARWICKSHIRE CHAMBER OF AGRICULTURE.

On Saturday last a special meeting of the Council of this Chamber was held at the Warwick Arms, to take into consideration a circular received from the Central Chamber respecting the meeting appointed for Tuesday last; to discuss the present unsatisfactory method of taking corn averages, and the necessity for a uniform system of weights and measures. Mr C. M. Caldecott presided, and there were also present—Sir Robert Hamilton, Bart., K.C.B., Messrs. J. J. Burbery, J. Palmer, J. Moore, J. H. Burbery, S. B. Congreve, T. Horley, C. Griffin, Berry, Norman, and Hugh Suffolk (secretary).

CORN AVERAGES.—The first business considered was the present unsatisfactory system of taking the corn averages.—The Chairman pointed out that this was not an urgent business, as a year or two must elapse before a satisfactory method could be carried out. The unsatisfactory character of the present averages must be generally admitted. The averages were only taken from a number of market towns, but not from all, and the quantities upon which the average prices in each town were based were fallacious, and the accuracy of the imperial averages was accordingly impugned. A large proportion of the grain sold never got returned at all, while much of it frequently changed hands in one day, and the same parcel might get entered in the returns twice at two different prices. The proportion of the estimated wheat crop sold in the excise return market towns within the harvest year was 27½ per cent. for 1865; 30½ per cent. for 1866; 34½ per cent. for 1867; and only 22 per cent. for 1868. The official averages could not represent anything more than the average price of whatever varying quantities of corn happened to be disposed of in the excise-return market towns.—The Chairman briefly referred to the operation of the Tithe Commutation Act.—Mr Moore (to the Chairman): Why were beans and peas excluded?—The Chairman (jocosely): You are a most extraordinary person. You seem to think I was consulted about it. You write to the Clerk of the Weather and he will inform you.—(laughter). I do not see why "taters" were excluded.—(laughter).—Mr Burbery: Why were mangolds excluded?—The Chairman: They were hardly known in those days, or they would have been made wall-fruit.—(laughter).—Mr Congreve remarked that the presence of foreign grain increased the average, although it lowered the price.—The Chairman observed that although not one-twentieth of the grain produced in the country was returned in the averages, and that which was returned appeared five or six times, he hardly knew how the matter could be remedied. The first twenty years of the operation of the tithe commutation, the average was exactly the same as the commutation, although during that period the £100 had been down to 87 and up to 113. It was simply half a farthing over on the wheat. When corn was at the lowest the averages happened to be the highest.—Mr Horley thought that the Chamber should send a deputation to the central meeting, as, like other Chambers, they had of late neglected to do so, and had not supported the Central Chamber as they should have done.—Sir Robert Hamilton expressed his acquiescence in the remarks of the Chairman as to the unsatisfactory method of taking the averages.—The Chairman observed that a palliative measure would be to have the returns from a greater number of markets.—Mr Moore thought the returns were not now compulsory. In the Warwick Corn Exchange there was no longer an officer to take the returns.—The Chairman said the returns were formerly taken simply with a view to

TO THE EDITOR OF THE TIMES.

Sir,—Permit me the use of your columns to direct the attention of the authorities entrusted with the arrangements for next Saturday to an overlooked but important detail. This letter should have been sent earlier, but I have only this moment returned to England ; I trust it is still timely. Let me begin by describing the shortcoming which it is desired to remedy. I have seen many ceremonies in the Abbey, with the same general result, but will confine myself to what I noticed in the funeral of the late Lord Tennyson. It was that the mass of the multitude who filled the transepts could see next to nothing of those who took part in the solemn function. My own seat was in a good position ; nevertheless I saw nothing of the distinguished persons who formed the procession except the foreheads of two of the pall-bearers who were of exceptional stature, whose well-known names I need not specify. All the others were sunk wholly out of sight in a trough of crowded humanity. It is a sad waste of effort and opportunity to so mal-organize a great spectacle that its most imposing feature proves to be invisible to the great majority of those who come to see it. The remedy I propose is simple. It is to lay down, at least between the choir and the chancel, where the procession usually rests for the first part of the service, a very low causeway of planks. The pavement of the chancel in Westminster Abbey is three (I think) steps higher than that of the choir and the rest of the cathedral ; the causeway might run level with the top of one of these steps and be ascended from the choir along an inclined plane. Its presence would offer no obstacle to those who had to pass along the transepts to their places before the ceremony began if side steps were laid down for the purpose. A causeway of only 18in. in height would raise the head of a person standing on it whose stature was only 5ft. 6in. to the level of that of a giant of 7ft. who stood on the ground. The experience just related of the degree of visibility of the two pall-bearers whose stature little exceeded 6ft., shows that a causeway of that moderate elevation would be of very great use.

FRANCIS GALTON.

TO THE EDITOR OF THE TIMES.

...strain upon the energies of
in recent years. The 12 o'clock rule was suspended
on Friday—which day, in accordance with ordinary
practice, would have been devoted to Supply, but
was given up by special arrangement to the CHIEF
SECRETARY'S Bill—and also on Monday, while the
House was convened to meet yesterday at noon,
and sat continuously until the clauses of the
measure and the accompanying schedules had been
got through. MR. GERALD BALFOUR made an appeal
to Irish members, having regard to the late sittings
on Friday and Monday, to reserve the discussion
of the new clauses of which they had given notice
to the report stage. On the understanding that
“fair and reasonable time” was to be allowed
for their consideration when the Bill came
on in its amended form, MR. DILLON and
MR. HEALY assented to this arrangement. It was
midnight, however, before the schedules were dis-
posed of and the Bill reported. On the motion for the
adjournment of the House over Whitsuntide SIR
CHARLES DILKE, supported by SIR E. ASHMEAD-
BARTLETT and MR. LABOUCHERE, made an attempt
to reopen, somewhat irregularly, the question of
foreign policy, but the CHANCELLOR of the
EXCHEQUER declined to give a promise of a
special day for such a discussion after the recess,
and members generally were in no mood to
enter upon a subject of that kind at so late an
hour.

At the end, therefore, of the fourth month of
the Session the House of Commons will meet, on
reassembling after Whitsuntide, with a fair
amount of work accomplished, but with a great
deal still to be done in the two months that
remain before the prorogation. Satisfactory as
the progress with the Irish Local Government Bill
has been, it must be borne in mind that, apart from
the new clauses for which the Irish Nationalist

Correspondence.

PHOTOGRAPHY AND SILHOUETTES.

SIR,—My new suggestion for the commercial development of photography is appropriate to your columns. I therefore ask you to let me address your readers on the subject of black silhouettes. They were very familiar to those who lived in the pre-photographic period. They were quickly cut out of paper by a deft hand with a small keen pair of scissors, and at least one of the many operators in this way ranked as an artist capable of making excellent likenesses. The paper was black on one side, and the silhouette that had been cut out was pasted then and there, with the black side upwards, upon a white card, and framed. A perfectly durable, and often a good likeness was thereby produced in a very short time. This art was superseded by photography, and is now temporarily extinct; but I want to show that it might with great facility—and, I think, with some profit in a humble way—be advantageously re-introduced by the help of the very agency that extinguished it.

I will explain what I myself did, beginning, as one always does, in the wrong way first, and afterwards getting right. I wanted, for some experimental purposes of my own, to obtain a large number of silhouettes; in fact, I wanted photographs of such cleanly-cut profiles as most persons have had occasion to see, of those who stand in a long dark passage between themselves and an only window at the end of it. I therefore arranged a makeshift dark tunnel. At one end was the camera; in front of the other end was a white sheet inclined to the light, and in the tunnel was the sitter for the time. As viewed in the camera, the appearance was that of a field of brilliant white, out of which was sharply cut so much as corresponded to the silhouette of the sitter's face. A rapid exposure sufficed, and I thereby got a white silhouette upon a black ground, which might be used as a negative to produce black silhouettes on a white ground. They served my own particular purpose perfectly, but they had not the clean and sharply-contrasted effect of the old silhouettes; so I cut some of them out of the paper and blackened them, and pasted them on cards. If I had blackened them with aniline ink, I could have produced papyrographed copies; or if I had greased them, and pressed them on stone or on zinc, the lithographer could have worked off copies by the hundred.

My suggestion lies in this last direction. It is, that the photographer, without taking any trouble to construct a tunnel as I did, should photograph on paper the profile of the sitter, either in strong light against a dark background, or *vice versa*; to develop sufficiently to see the image clearly, and then to wash for a second, but not to fix, and rapidly to dry it in the dark; next in full, but somewhat non-actinic light, to quickly cut out the silhouette before the image has time to fade; lastly, to (a) blacken the silhouette, dry and mount it; or (b) grease it, press it on a small lithographic surface, and thence to take as many prints as are desired. The whole of the latter process need occupy very few minutes, and the sitter could walk away in possession of his or her likenesses.

Now the merits of this plan are, that no artistic, and little photographic skill is required; there is no need for a careful adjustment of exposure of lights, and of position, or of accessories; there is no necessity for careful development. The carrying out of the process requires no skill except so far as the cutting out is concerned, which any neat-handed person can soon learn to do quickly and well. The arrangements for rapid drying, and for the various printing operations, might be of the humblest description, and yet a really useful and pleasing likeness might be turned out, far superior in value to the commoner kind of photographs, and to not a few of the more costly ones. The rapidity and cheapness with which lithographed

copies could be supplied would be incomparably superior to any thing that photography can effect. The cost of outfit for experimentalizing if a lithographer can be found to help in the first instance, does not exceed that of a pair of sharp lace-cutting scissors; and it would I think be well worth the while of an enterprising photographer who is slack of work to attempt to establish and supply a demand for prettily-mounted silhouettes.

FRANCIS GALTON.

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could be applied would be incomparably more than that photography can afford. It is a mistake to experiment with it, if it is not to be of help in the first instance, and it would, I think, be well worth the while of an enterprising photographer who is slack of work to attempt to establish and supply a demand for prettily-mounted silhouettes.

FRANCIS GALTON.

MAYALL'S PATENT.

SIR,—In the News of July 1st, I see that Mr. V signs himself as "Abridger of 'Photographic' and Specifications of Patents to the Hon. the Board of Trade." Doubtless Mr. Walenn has abridged specifications relating to photography for the Patent Office, but it is due to the Abridger of the last volume of "Abridgments of Specifications relating to Photography," published in 1885 by the Patent Office, to state that Mr. Walenn had no connection whatever with that volume.—I am, yours, &c.,

CHAPMAN JONES.

Proceedings of Societies.

LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.

MEETING was held on the 30th ult. A. MACKIE in the chair. The HON. SECRETARY proposed the adjournment of the business of the Annual Meeting for four weeks, when he hoped several members who had gone to the Convention would have returned. This course was adopted, and technical matters were considered. The cause and prevention of iridescent stains at the margin of plates was discussed.

W. E. DEBENHAM said it would not occur if the plates were packed closely and hermetically sealed. The marks could be removed by rubbing gently with water.

The CHAIRMAN used a pad of cloth moistened with turps, and in a batch prone to the evil he soaked the plates a couple of minutes in ammonia and bromide solution, afterwards adding pyrogallol to perform development. This plan he had never known to fail.

Some remarks upon fixing paper negatives followed. The proportion of sodic hyposulphite to water which was recommended ranged from eight ounces to one pound of the salt to each pint of water; clearing in alum before fixing was said to prevent an effective action of the latter process in the case of certain gelatines.

Rendering paper negatives translucent was then talked about; vaseline and other paraffins being favoured by various speakers.

Attention was directed to an article in the *Photographic Times* (New York), signed by H. P. Robinson, wherein it set forth that the writer had heard good accounts, from different quarters, of a lens coming into great use in the States, named "The Wale." The question was asked whether anyone had seen or heard anything of the capabilities of this lens.

W. H. PRENTWICH thought it was made in Paris.

W. E. DEBENHAM supposed the lens named by Mr. Robinson to be an imitation of Steinheil's Aplanat, and similar to those manufactured in Paris, and sold under different names in this country.

W. M. ASHMAN remarked that the Secovill Company were agents in New York for the Wale lens.

R. S. KIDD said the best Jubilee year race views he had seen were taken by Captain Clark, who used a 16-inch focus lens and 10 by 8 plates.

This led to a discussion, in which a focus equal to twice the length of the plate was preferred for instantaneous work.

The HON. SECRETARY drew attention to a newspaper paragraph referring erroneously to Photographic Societies. He said they regarded reports of meetings purely as advertisements.

W. E. DEBENHAM: If they would stick to that it would not matter, but experience shows it is not the fact.

Mayall's process and the Abridger's report thereon was severely criticised. Tint oleo and other speculative transactions having some connection with photography were likewise referred to, and it was suggested that photographic societies

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LONDON, SATURDAY, FEBRUARY 13, 1875.

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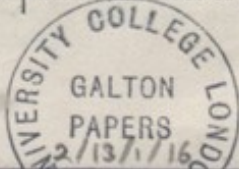
THE BURNS GLENRIDDELL MSS.

The *Athenæum* has lately published some letters and poems of the Scottish poet Burns. It appears that two MS. volumes were presented to the Athenæum Library, Liverpool, by the widow of Mr. Wallace Currie, son of Dr. Currie, the biographer of Burns. The volumes have hitherto been kept locked up, sacred from all popular inspection. But at the suggestion of Mr. Henry A. Bright, a member of the Athenæum, they have been placed within a glass case in the library, and may at all times be readily inspected. Mr. Bright has, moreover, printed, in a handsome small quarto volume, a complete catalogue of the poetical portion of the MSS., transcribing in full such pieces as were unpublished. For this liberality the admirers of Burns and the lovers of literature owe Mr. Bright a debt of gratitude. So long as the MSS. existed there would have been curiosity and conjecture as to their nature and contents; and this feeling could only have been gratified by a visit to Liverpool, a most inconvenient process to the greater number of the readers and students of Burns, including, above all others, our American friends, the most enthusiastic worshippers of the poet. Copies will now be found in the British Museum and other public libraries. Burns ap-

pears to have been strongly attached to Mr. Riddell, of Glenriddell, a Scottish laird and antiquary, "skilled in old coins," and to Mr. Riddell's wife, a "sweet, lovely dame" of sense, wit, and taste. At their fireside he said he had enjoyed more pleasant evenings than at all the houses of fashionable people in the south of Scotland put together. As some acknowledgment, the poet copied for them into the two volumes referred to "bagatelles strung in rhyme," pieces local or unfinished, and copies of a number of his letters, those which he "sketched in a rough draught, and afterwards wrote out fair." Great confidence in his friends, as well as a deep sense of their hospitality and kindness, were evinced by this literary present, and the intimacy subsisted for about five years. In addition to the MSS. now printed by Mr. Bright, I have seen a copy of the 1793 edition of Burns's *Poems*, with the following autograph inscription of the poet:—

"To Robert Riddell, Esq., of Glenriddell. When you and I, my dear sir, have passed that bourne whence no traveller returns, should these volumes survive us, I wish the future reader of this page to be informed that they were the pledge of a friendship, ardent and grateful on my part, as it was kind and generous on yours. That Enjoyment may mark your days, and Pleasure number your years, is the earnest prayer of, my dear sir, your much indebted Friend,—THE AUTHOR."

Unfortunately a disagreement took place between the friends so strongly attached; some imputed impropriety on the part of Burns towards a lady, arising out of convivial excess—and the friendship was broken up. Mr. Riddell died within a twelvemonth after the above affectionate inscription, and died unreconciled to the poet. The unpublished portion of the Glenriddell volumes is not calculated to increase or even sustain the high reputation of Burns. The poetry is poor, and the letters inflated and incorrect. Their chief interest arises from the light they incidentally throw on the poet's history and feelings. And the first impression that strikes one is the warmth of gratitude expressed by Burns on all occasions to persons of rank who had shown him any kindness or attention. To the higher officials of the excise this was natural, for the poet considered his excise commission his "sheet anchor in life," compared with which his farm was of little or no account. His great ambition was to be a supervisor of excise; and that he did not obtain this appointment must for ever be held as a reproach to the gentry of that day. This was the only way they could have benefitted him without degradation to either party. "It might have been a luxury," as Carlyle says, "and it was a duty for our nobility to have done." The Duke of Athole had received Burns with kindness, and the poet writes in his Glenriddell volume: "God, who knows all things, knows how my heart aches with the throes of gratitude whenever I recollect



my reception at the noble house of Athole." At Oughtertyre House he had also been well received, and he writes:—

"I lived there Sir William's guest for two or three weeks, and was much flattered by my hospitable reception. What a pity that the mere emotions of gratitude are so impotent in this world! 'Tis lucky that, as we are told, they will be of some avail in the world to come."

Of Sir James Hunter Blair:—

"A man he was! How few of the two-legged breed that pass for such deserve the designation! He pressed my hand, and asked me, with the most friendly warmth, if it was in his power to serve me; and if so, that I would oblige him by telling him how. I had nothing to ask of him; but if ever a child of his should be so unfortunate as to be under the necessity of asking anything of so poor a man as I am, it may not be in my power to grant it, but, by G—, I shall try!!!"

There are some tender lines on an early heroine:

"Once fondly lov'd, and still remembered dear," &c.

The lines are in all the editions of the poems, but this note on them in the Glenriddell MSS. is interesting:—

"'Twas the girl I mention in my letter to Dr. Moore, where I speak of taking the sun's altitude. Poor Peggy! Her husband is my old acquaintance, and a most worthy fellow. When I was taking leave of my Carrick relations, intending to go to the West Indies, when I took farewell of her, neither she nor I could speak a syllable. Her husband escorted me three miles on my road, and we both parted with tears."

In the copies of his letters written out for his friend, Burns does not select his best. He gives, however, his autobiography addressed to Dr. Moore, copied by an amanuensis, to which the poet appends this note:—

"Know all whom it may concern, that I, the author, am not answerable for the false spelling and injudicious punctuation in the foregoing transcript of my letter to Dr. Moore. I have something generous in my temper that cannot bear to see or hear the absent wronged, and I am very much hurt to observe that in several instances the transcriber has injured and mangled the proper name and principal title of a personage of the very first distinction in all that is valuable among men, antiquity, abilities and power (virtue, everybody knows, is an obsolete business); I mean the devil. Considering that the transcriber was one of the clergy, an order that owe the very bread they eat to the said personage's exertions, the affair was absolutely unpardonable.—Ro. B."

Rather a ponderous joke! A letter to Clarinda concludes in this "high falutin'" style:—

"No cold language—no prudential documents. I despise advice and scorn control. If you are not to write such language, such sentiments as you know I shall wish, shall delight to receive, I conjure you by wounded pride! by ruined peace! by frantic disappointed passion! by all the many ills that constitute that sum of human woes, a broken heart!!! to me be silent for ever. If you insult me with the unfeeling apophthegms of cold-blooded caution, may all the—but hold! a fiend could not breathe a malevolent wish on the head of my angel! Mind my request. If you send me a page baptized in the font of sanctimonious prudence, by heaven, earth, and hell, I will tear it into atoms! Adieu; may all good things attend you.—R. B."

Burns adds:—

"I need scarcely remark that the foregoing was the fustian rant of enthusiastic youth."

But in reality the "rant" was written in the autumn of 1792, rather less than four years before the death of the poet. It is curious to find him somewhat ashamed of the extravagant epistle, yet sending it to his fair correspondent, and transcribing it for his friend, the laird of Glenriddell. The Burns MSS. show that Dr. Currie took considerable liberties with the poet's letters, making desirable omissions, and generally softening and sobering vehement expressions. One or two brief examples will suffice. In his autobiography, addressed to Dr. Moore, the poet mentions his going to a dancing school. "My father," he adds, "had an unaccountable antipathy against these meetings, and my going was what to this hour I repent, in absolute defiance of his commands. My father, as I said before, was the sport of strong passions; from that instance of rebellion he took a kind of dislike to me, which, I believe, was one cause of that dissipation which marked my future years." Gilbert Burns entirely dissented from his brother on this point, and Currie softened the passage. "My going was what to this moment I repent, in *opposition to his wishes*. My father, as I said before, was *subject to strong passions*; from that instance of *disobedience* in me, he took a sort of dislike," &c. Afterwards Burns said, "Early ingrained piety and virtue never failed to point me out the line of innocence." Currie gave him the moral benefit of a stronger statement: "Early ingrained piety and virtue *kept me for several years afterwards within the line of innocence*." In his love affairs the poet says: "Like every warfare in this world, I was sometimes crowned with success, and sometimes mortified with defeat." Currie rounds off this declaration: "As in every other warfare in this world, *my fortune was various*; sometimes I was *received with favour*, and sometimes I was *mortified with a repulse*." At Irvine, whither he had gone to learn flax-dressing, Burns says, "I learnt to look unconcernedly on a large tavern bill." Currie evidently thought this too grandiloquent, so he changed it to "I learnt to *fill my glass*." The original letter (now in the British Museum) shows many other variations. But enough for the present. C.

ON CERTAIN VERSES WRONGLY ASCRIBED TO ROGERS.

In the *Quarterly Review* of Oct., 1873, there is an article on Holland House, which contains the following passage, p. 434, referring to the trees in the adjacent park: "There is in the grounds another venerable tree (not mentioned in this book) which Rogers thus addressed in verse (now published for the first time)." Then follow eighteen

lines, of which it is only necessary that I should quote the beginning and the end :—

"Majestic tree, whose wrinkled form hath stood
Age after age the patriarch of the wood;
Thou who hast seen a thousand springs unfold
Their ravell'd buds and dip their flowers in gold,

Yet shalt thou fall, thy leafy tresses fade,
And those bare scattered antlers strew the glade;
Arm after arm shall leave the mouldering dust,
And thy firm fibres crumble into dust;
The Muse alone shall consecrate thy name,
And by her powerful art prolong thy fame;
Green shall thy leaves expand, thy branches play,
And bloom for ever in the immortal day."

I beg to point out that these verses are not by Rogers,—their style ought to have warned the reviewer against making an unqualified statement,—neither do they refer to any tree in the grounds of Holland House; but it appears that they are extracted, with certain omissions, to which I shall have to draw attention, and with the alteration of not half-a-dozen words, from a poem of Dr. Erasmus Darwin, the once widely-known author of *The Botanic Garden*, written upon Swilcar Oak, in Needwood Forest, Derbyshire. The verses will be found in a large quarto prose work of his, called *Phytologia; or, the Philosophy of Agriculture and Gardening*, published in 1802, at p. 528, prefaced by these words: "The following address to Swilcar Oak, in Needwood Forest, a very tall tree, which measures" (I here omit a few lines), "was written at the end of Mr. Mundy's poem on leaving that forest, and may amuse the weary reader and conclude this section." Then come the verses in question. It appears from p. 526 that Mr. Mundy's poem was at that time unpublished.

The verses in the *Quarterly Review* are identical with those in the *Phytologia*, except that "majestic tree" has been substituted for "gigantic oak," and "leaves" for "gems." Also, a stanza of eight lines is omitted, which has direct reference to Mundy, and in which he is named. Again, in the fourth line from the bottom, "The muse alone" is substituted for "But Mundy's verse." In short, the person who stole the poem wished to dedicate it to some tree in a different place, and that tree not an oak.

It struck me that there was a shade of ambiguity in the language used by Dr. Erasmus Darwin in speaking of his authorship of the verses which had better be cleared up. I therefore sought for, and have before me now, as I write, a copy of Mr. Mundy's poem; another one belongs to the present representative of the family, who resides at Mark-eaton Hall, Derby. The poem is printed, but I do not know whether it was ever published. The copy before me is "from the author, 1808," and has many pencillings and also some notes in ink, made, as I am assured, by a contemporary pen. It is a quarto pamphlet, on the title-page of which

is "Needwood forest, written in the year 1776; Litchfield: printed by John Jackson." Bound up with it is another pamphlet by Mr. Mundy, or the same size, also "from the author," called "The Fall of Needwood. Derby: printed at the Office of J. Drewry, 1808." It is the former of these that alone concerns us; I have mentioned the latter merely to avoid future confusion of two separate works. Mr. Mundy's poem occupies forty-four pages, and is followed by four other small poems, signed respectively with different initials. The first is "Address to Swilcar Oak described in Mr. Mundy's poem on Needwood forest," and is the earlier and somewhat crude form of the verses afterwards published in the *Phytologia*. It is signed E. D., underneath which is written "Dr. Darwin." The next poem, signed A. S., is similarly stated to be by Miss Seward. She is the lady who, as tradition states, wanted to marry the Doctor; but, as he did not respond, she turned spiteful, and showed it in her biography of him. The next, B. B., is by Sir Brooke Boothby, the beautiful monuments to whose family are so great an ornament to Ashbourne Church; and the last is by E. D., Junr., or Erasmus Darwin, a son of the Doctor, much given to versifying, and who died young. It would appear that Mr. Mundy's poem remained long in MS., that his literary friends sent him contributions and complimentary verses, and that he finally had them printed, all together.

As the verses of the Doctor in their earliest form have never, to my knowledge, been published, and as they contain the lines in a crude shape, which have been improved in the *Phytologia* version, and wholly omitted in that published by the *Quarterly Reviewer*, they may be acceptable to the reader. They will bring the motive of the omissions in the verses ascribed to Rogers into strong relief. They are as follows :—

"Hail stately oak, whose wrinkled trunk hath stood
Age after age, the sov'reign of this wood;
You, who have seen a thousand springs unfold
Their ravell'd buds, and dip their flowers in gold;
Ten thousand times yon moon relight her horn,
And that bright eye of evening gild the morn.

Say, when of old the snow-hair'd druids pray'd
With mad-ey'd rapture in your hallow'd shade,
While to their altars bards and heroes throng,
And crowding nations join the ecstatic song,
Did e'er such dulcet notes arrest your gales
As MUNDY pours along the listening vales?

Yes, stately oak, thy leaf-wrapped head sublime
Ere long must perish in the wrecks of time;
Should o'er thy brow the thunders harmless break,
And thy firm roots in vain the whirlwind shake,
Yet must thou fall.—Thy withering glories sunk,
Arm after arm shall leave the mould'ring trunk.

But MUNDY's verse shall consecrate thy name,
And rising forests envy SWILCAR's fame:
Green shall thy gems expand, thy branches play,
And bloom for ever in the immortal day.

E. D."

It is scarcely possible to believe that Rogers purloined the verses from the *Phytologia* and passed them off for his own, though that sort of literary appropriation does, unhappily, exist, as was shown by a statesman in his speech in the House of Commons some twenty years ago, on the death of a great English general, coolly purloining for the occasion the oration of a Frenchman over a recently deceased French marshal. It is to be hoped that the *Quarterly Reviewer* will be able to show that the information upon which he made his assertion is less trustworthy than he imagined.

To conclude, it further appears, from the *Quarterly Review*, that Lord Wensleydale wrote an impromptu couplet on these verses, to the effect that he would bet a thousand pounds that the stout tree would survive them. Time shows that he is wrong. Swilcar oak has, as I am informed, disappeared, and the verses remain. No doubt the residuary legatees of his lordship will be eager to pay the forfeited money to the Doctor's next of kin, in which case I shall be most happy, as one of his grandchildren, to receive my share of it.

FRANCIS GALTON.

42, Rutland Gate.

ST. VALENTINE IN THE CAVALIER DAYS.

The *Westminster Drolleries* is a book an original edition of which is not to be had for love or money. The two parts (1671 and 1672) have been printed in perfect fac-simile by Mr. Roberts of Boston, Lincolnshire, who has obligingly forwarded to us a copy. It contains the songs and poems current in the above years at the theatres and at Court. The work is edited by J. Woodfall Ebsworth, M.A., Cantab., who has written an Introduction on the Literature of the Drolleries, and added a copious Appendix of notes, illustrations, &c.

The songs and poems are, of course, very much like the men and the times, and, it may be added, the women also, whose ways and manners they illustrate. There is an impalpable but unmistakable airiness of principle about most of them. Love is mere passion. The words flutter like the ribbons which were in fashion with both nymphs and swains. The oaths bind to nothing; the vows are broken as soon as made; and if the rogues and hussies are amusing, they are not edifying. The book is, in short, one of those which apologizes for its appearance by the statement that it is intended for the student rather than for the general reader. There is, in short, a very *haut goût* in some of its recesses, but "students" of cavalier literature have strong stomachs.

There are some exceptions to this; and, happily, these exist in two examples which serve our purpose well, seeing that to-morrow is Valentine's Day. The first example runs thus merrily:—

"THE DRAWING OF VALENTINE.

The Tune, Madam's Jig.

There was and there was,
And aye Mary was there.

A Crew on St. Valentine's Eve did meet together,
And every Lad had his particular Lass there,
And drawing of Valentines caused their
Coming thither.

Then Mr. John drew Mrs. Joan first, Sir,
And Mrs. Joan would fain have drawn John an' she
durst, Sir.

So Mr. William drew Mrs. Gillian the next, Sir;
And Mrs. Gillian not drawing of William, was vext, Sir.

They then did jumble all in the hat together,
And each did promise them to draw 'em fair, Sir;
But Mrs. Hester vowed that she had rather
Draw Mr. Kester than any that was there, Sir.
And Mrs. Hester drew Mr. Kester again, Sir,
And Mr. Harry drew Mrs. Mary featly,
And Mrs. Mary did draw Mr. Harry as neatly.
They altogether then resolv'd to draw, Sir,
And ev'ry one desir'd to draw their friend, Sir;
But Mr. Richard did keep 'em so in awe, Sir,
And told 'em then they ne'er should make an end, Sir.

So Mr. Richard drew Mrs. Bridget squarely,
And Mrs. Bridget drew Mr. Richard as fairly,
But Mr. Hugh drew Mrs. Sue but slily
And Mrs. Sue did draw Mr. Hugh as wily.
Then have you heard of the twelve who lately drew, Sir?
How ev'ry one would fain their friend have drawn, Sir;
And now there's left to draw but four of the Crew, Sir;
And each did promise his Lass an ell of lawn, Sir.
So My Waty drew Mrs. Katy but slightly,
And Mrs. Katy did draw Mr. Waty as lightly;
But Mr. Thomas in drawing of Annis too fast, Sir,
Made Mrs. Annis to draw Mr. Thomas at last, Sir.
And there is an end, and an end, and an end of my song,
Sir,

Of Joan and Johnny, and William and Gillian too, Sir.
To Kester and Hester and Harry and Mary belong, Sir,
Both Richard and Bridget, and Hugh and honest Sue, Sir,
But Waty and Katy, and Thomas and Annis here, Sir,
Are the only four that do now bring up the rear, Sir.
Then ev'ry one i' the Tavern cry amain, Sir,
And staid till drawing fill'd their brain, Sir."

In the above rough lines we find some of the ceremonies of the Eve of St. Valentine. The second example shows us how, in the same bygone times, St. Valentine's Day was observed when the swains and their mistresses contrived to encounter each other:—

"THE VALENTINE.

As youthful day put on his best
Attire to usher morn,
And she, to greet her glorious guest,
Did her fair self adorn,
Up did I rise, and hid mine eyes
As I went through the street,
Lest I should one that I despise
Before a fairer meet.

And why

Was I,

Think you, so nice and fine?

Well did I wot

Who wots it not?

It was St. Valentine.

In fields, by Phœbus, great with young
Of flowers and hopeful buds.
Resembling thoughts that freshly sprung
In lovers' lively bloods.

I should not, at this date, refer to the matter, had it not been that the fact of the edition in question, "the first in two volumes, 1790," having ever been published, was denied by Mr. Cook in the above note. Now, if we are to take Robert Chambers and James McKie of Kilmarnock as authorities, there was such an edition, as may be seen in the bibliographies appended to the various editions published by these gentlemen. I am glad to learn that Mr. McKie intends to issue a new edition of his "popular" one in two volumes, with some important additions and improvements.

J. B. MURDOCH.

Glasgow.

NEW WORKS SUGGESTED BY AUTHORS (5th S. ii. 385, 496):—

"Witchcraft.—We yet want a full, elaborate, and satisfactory history of witchcraft. Hutchinson's is the only account we have which enters at all at length into the detail of the various cases; but his materials were generally collected from common sources, and he confines himself principally to English cases. The European history of witchcraft embraces so wide a field, and requires for its just completion a research so various, that there is little probability, I fear, of this desideratum being speedily supplied."—James Crossley, Esq., in Pott's *Discovery of Witches in the County of Lancaster* (Chetham Soc., vol. vi. p. lii).

J. E. BAILEY.

"GATE" (5th S. ii. 406, 496).—"Cheyne of gate" may mean "chain of agate"; or "chain of jet" (D. *git*, Fr. *jayet*, L. *gagates*), which would seem to be etymologically the same word.

R. S. CHARNOCK.

Gray's Inn.

BIGARRIETY (5th S. ii. 307, 434; iii. 36).—The figurative meaning given of *bigarrure* in the note upon General Pownall's pamphlet is based upon the subjoined examples and explanations of the *Dictionnaire de l'Académie Française*:—

"Il y a bien de la bigarrure dans cette société, pour dire, un mélange de personnes mal assorties.

"Il y a de la bigarrure dans cet ouvrage, pour dire, un mélange de choses qui vont mal ensemble.

"On dit bigarrure de style, pour mélange d'expressions nobles, et de locutions basses."

WILLIAM PLATT.

Conservative Club.

SHAKESPEARE'S NAME (5th S. ii. 405, 484; iii. 32).—When I remember Dr. CHARNOCK's erudition and research, his last article on Shakespeare's name reads like a mystery to me. Why he should persist in chasing the miserable poet through all the intricacies and labyrinthine windings that lie between Shukburgh and Shakspeare, I cannot comprehend. The name is found in its simple dress up to the feudal days, when it and the vast majority of our surnames arose. It has for its fellows "Fewtarspeare," "Breakspear," "Shake-shaft," "Shakelock," "Wagspear," "Wagstaff," "Waghorn," and "Shakelance"; while such terms

as "shake-buckler," "wag-feather," "wag-tail," and "tipstaff," are sufficient evidence of the fondness of our forefathers for this kind of nickname. Our "Doolittles," "Makepeaces," &c., open out to us a flood of surnames made up in the same way of verb and substantive. If I were claiming an exceptional derivation, the matter would be different, but the fact is otherwise. (a). It is one of a class. (b). It is in harmony with the allegorical style of nickname in vogue at the time of surname formation. (c). It arises at the time when the feudal officeships suggested by the name were in their heyday glory. (d). Above all, so far as the name can be traced back in our registers, it appears in its simple dress, subject only to those variations of letters which are even now a bone of contention among literary men. Dr. CHARNOCK, if he will forgive the illustration, seems to me to be like a man who lives next door to a chandler's shop sending out to Timbuctoo for half a pound of candles.

CHARLES W. BARDSLEY.

Higher Broughton.

P.S. I am firmly convinced with Dr. CHARNOCK that Bickerstaffe is *local*.

TIED=BOUND (5th S. ii. 326; iii. 12).—I find that "tied" is used in the same way in North Lincolnshire.

J. T. F.

Hatfield Hall, Durham.

SHERIFFS' ORDERS FOR EXECUTING HERETICS (5th S. ii. 487; iii. 51).—Thanking Mr. BROWN for his reply on "Sheriffs' Orders for Executing Heretics," may I say that unfortunately the Close Rolls of Philip and Mary contain no such notices of Sheriffs' Writs, and it is much to be feared that a great part of the Chancery Documents of the Marian period were destroyed in the great fire of London, A.D. 1666.

Can Mr. BROWN, or any other of your readers, suggest any other quarter in which search might be made? How is it there are so few orders for executions in the Privy Council Minutes (only two or three), considering that some hundreds of our country men and women were executed under the Act "de hæretico comburendo"?

Again, where are the documents which Foxe must have consulted, and to which he refers as "ex registro," or "from the register of the Bishop of London"—I mean the details of the Ecclesiastical Court trials? They do not appear in the Bonner register of St. Paul's, and I am told that there is no other.

There is one order for an execution in this register sent by the Privy Council to Bonner. He is told to make arrangements for certain burnings at specified places. Could it be that the Bishop, during this terrible reign, or the Commission had authority to issue precepts for executions for heresy? If so, where are these Episcopal man-

dates—might they be in county or archidiaconal hands?

Let me remind Mr. BROWN that though Stratford, in Essex, is now in the Rochester diocese, this arrangement is quite modern—about six years old. This part of Essex was always in olden times a part of the London diocese.

Another point to be borne in mind is that the Shrievalty of Essex and Hertfordshire was a combined one until Queen Elizabeth's reign. Are there any documents, civil or ecclesiastical, such as we are in search of preserved at Hertford?

The Sheriff of Essex and Herts in 1556 seems to have been Wm. Harris, Esq., of Oncksea, who died during his Shrievalty, and was succeeded by Thomas Sylsden, Esq. Is the exact date of Harris's death known?

W. J. BOLTON.

Stratford, E.

"ACHES" (5th S. ii. 68, 139, 458, 526.)—Another instance of the pronunciation of "aches" as a dissyllable occurs in *The Knight of the Burning Pestle*, Act ii. sc. 8:—

"But whoever laughs and sings
Never he his body brings
Into fevers, gout, and rheums;
Or lingeringly his lungs consumes,
Or meets with aches in the bone,
Or catarrhs or griping stone."

Dyce notes that the word is here dissyllabic.

MIDDLE TEMPLAR.

EXPLOSIONS OF GUNPOWDER MAGAZINES BY LIGHTNING (5th S. iii. 48, 114.)—An account of the blowing up of the Keep of Castle Cornet is to be found in Dicey's *Historical Account of Guernsey*, published in 1751, p. 122; and a ballad, by the Earl of Winchelsea, on the same subject, with a narrative of the event by an eye-witness, appeared in, I think, the April number, 1873, of *Blackwood's Magazine*.

EDGAR MACCULLOCH.

Guernsey.

In vol. i. of the *Insurance Cyclopædia*, art. "Colliery Explosions," M. may find some facts which will interest him. See also vol. iii. of same work, art. "Explosions," now in the press; and a subsequent art., "Gunpowder."

CORNELIUS WALFORD.

86, Belsize Park Gardens.

"YET THIS INCONSTANCY," &c. (5th S. iii. 87, 116.)—I am just informed by the kindness of a friend, that in an early edition (1825) of the *Talisman* these lines are printed correctly; so that "inconstancy" is probably an old misprint. However, this edition contains the false reference to "Montrose's Lines," which, I fear, must be Scott's error in truth.

CHARLES F. S. WARREN, M.A.

Bexhill.

BELL INSCRIPTIONS (5th S. i. 465; iii. 74.)—"Clemens," &c., is a mere variation of "Pura,

pudica," &c. I have not met with it. Another version, beginning "Virgo pudica," &c., was the legend of the seal of St. Mary's Abbey, York. To the list I gave last year (i. 465), I may add:—

"Per Evangelica dicta deleantur nostra delicta."

"Evangelica lectio sit nobis salus et protectio."

Benedictiones matutinales: Breviaries of Sarum, York, Aberdeen, &c.

I am pretty sure I have met with these as bell inscriptions somewhere.

J. T. F.

Hatfield Hall, Durham.

ST. CRISPIN: SHOEMAKER'S LITERATURE (1st S. viii. 619; 5th S. iii. 74.)—The following may be added to the above:—

"THE TANNER'S DITTY.

Most ancient clothing, we may read, from shame and from the weather,
Was made of skins of animals, from which we now make leather.

Sing, tanners, sing; wives, friends, all sing, sing heartily together—

Success to all the tanners; sing, 'There nothing is like leather.'

To draw and drive, to whip and shield, to lace, bind, tie, or tether,
For useful purposes all round, there's 'nought' so good as leather.

No buckskin breech, boot straps and gloves, nor saddle for the rider,
Mock turtle soups and gelatines, nor jujubes, but for leather.

When Peter on his mission went, he ne'er had lodgings better

Than when a good man took him in who lived by tanning leather.

The poor old Pope in palace grand, surrounded by his feather,

Will ne'er be good like Peter was within the smell of leather.

We've heard effects of rope with knots, when used by a kind father,

To make a good and useful man, but what if 'tanned' with leather?

A useful study it might make upon the question whether Any of us here would have been had it not been for leather.

Then praise the tanner's worthy craft, be it extolled for ever,

For all the blessings we enjoy connected with the leather."

"J. W., in *Leather Trade Circular*."

B.

Miscellaneous.

NOTES ON BOOKS, &c.

Shakespeare's Centurie of Prayse. Being Materials for a History of Opinion on Shakespeare and his Works. Culled from Writers of the First Century after his Rise. (Trübner & Co.)

THE editor of this exceedingly interesting volume has not put his name on the title-page, but he signs the Preface "C. M. Ingleby," and he will

This ceremony of marrying the sea, as they call it, is ancient: and performed yearly in memory of the grant of Pope Alexander the III., who being restored by the Venetians unto his seat again, granted them power over the Adriatick Sea, as a man hath power over his wife; and the Venetians to keep this possession, make every year this watery cavalcata. I confess the sight is stately, and a Poet would presently conceive that Neptune himself were going to be married to some Nereide."

The correspondents of "N. & Q." forget that the Doge spoke in Latin, that the marriage was for a year, and that if the bridegroom had retained the ring, the marriage could hardly have been said to be valid.

RALPH N. JAMES.

Ashford, Kent.

[This subject is now closed.]

ON CERTAIN VERSES WRONGLY ASCRIBED TO ROGERS.

(5th S. iii. 122.)

In reference to MR. GALTON's communication, I admit my mistake in supposing that the verses were addressed to a tree in the grounds of Holland House. But I have what I thought the best evidence that they were addressed to a tree at Ampt-hill, and composed by Rogers. They purport to be by him in the book at Ampt-hill, where he was a frequent visitor: the family (the late Lord Wensleydale's), who have so long occupied the place, believed them to be his; and members of that family (still living) have heard him more than once recite and allude to them as his whilst standing before and pointing to the tree. I have carefully verified these facts, and I cannot, therefore, gratify MR. GALTON's hope that I might be able to find my information less trustworthy than I imagined:—

"It is scarcely possible" (he observes) "to believe that Rogers purloined the verses from the *Phytologia*, and passed them off for his own, though that sort of literary appropriation does unhappily exist, as was shown by a statesman in his speech in the House of Commons, some twenty years ago, on the death of a great English General, coolly purloining for the occasion the oration of a Frenchman over a recently deceased French Marshal."

Having been (with the late Mr. Blackett, M.P. for Newcastle) the joint-detector of the plagiarism, I may be permitted to state that what the statesman purloined were sundry translated passages from a review of the *Memoirs of Marshal St. Cyr*, in the *Revue Française*, by M. Thiers. But although the example is equally striking, and other startling instances of hardly intelligible plagiarism might be accumulated, it is certainly a curious anomaly in character that the correct, fastidious Rogers should have appropriated such lines, or taken pride in the real or assumed ownership of them:—

"To conclude" (says MR. GALTON), "it further appears from the *Quarterly Review* that Lord Wensleydale wrote an impromptu on these verses, to the effect that he would bet a thousand pounds that the stout tree

would survive them. Time shows that he is wrong. Swilcar oak has, I am informed, disappeared, and the verses remain. No doubt the residuary legatees of his lordship will be eager to pay the forfeited money to the Doctor's next of kin, in which case I shall be most happy, as one of his grandchildren, to receive my share of it."

Time shows that Lord Wensleydale was right. His proffered bet was, not that Swilcar oak would survive the verses, but that the tree to which he believed the verses to have been addressed would survive the poet by whom he believed them to have been written, i. e. that the Ampt-hill tree would survive Rogers:—

"I'll bet a thousand pounds—and Time will show it—
That *this* stout tree survives the feeble poet."

The Ampt-hill tree is in full vigour, and Rogers is dead. MR. GALTON having volunteered to take up the bet, will, of course, be as happy to pay his share of the forfeited money to the residuary legatees as he professed himself to receive it from them in an opposite contingency.

THE WRITER OF THE ARTICLE ON "HOLLAND HOUSE" IN THE "QUARTERLY REVIEW."

PHILOLOGISTS ON PROPER NAMES (5th S. iii. 62, 113.)—I wish to explain that my remarks on the subject of the uncertainty of proper names were intended to apply rather to local names than to surnames. I am glad to be able to say that MR. BARDSLEY's book upon surnames is fairly free, as he claims it to be, from guesswork. This being so, perhaps the most forcible comment on the untrustworthiness of the explanation of names is to be found in the fact that MR. BARDSLEY has occasionally fallen into the snares which he did his best to avoid. I give a few instances from the first edition.

At p. 94 a *field* is said to be a *felled* place or woodland clearing. This is the common guess; it is entirely unsupported by evidence.

At p. 93 *royd* is explained to mean a place *ridded* of waste wood. What is this but guesswork of the wildest kind? We might as well derive *Boyd* from the verb *to bid*. And the result of the guess is most remarkable; viz., that an *ak-royd* means a place *ridded* of oaks; whilst a *hol-royd* means a place *ridded* of hollies! How a place in which there are no oaks visibly differs from a place in which there are no hollies, we are not told. We have heard of *lucus a non lucendo*; here we have an open or "lucid" place so named *a non luco*, from there being no grove in it.

At p. 421 *Gerish* is said to be the same as *garish*, and we are told that Lydgate uses *geryshe* for *garish*, the reference being omitted. Chaucer, however, uses both *gery* and *gerful* in the *Knights Tale* in the sense of changeable or fickle; a solution which is quite as probable, though admittedly a guess.

I think, too, we have a right to complain of the want of exact references in many places. Thus, at p. 298, we find, "a *hure* or *howre*, as Chaucer spells it, was a shaggy cap of fur, or coarse jagged cloth." How is one to verify a statement like this, there being no such word as *hure* or *howre* in Tyrwhitt's *Glossary*, nor any reference to Chaucer in Stratmann's *Dictionary* under the word *hure*? I do not wish to pursue the subject further, and I should not have said so much as this, if it were not that Mr. BARDSLEY is, I hope, engaged on a really good dictionary of surnames, and it is, therefore, not out of place to point out what things should be avoided.

WALTER W. SKEAT.

Cambridge.

"BOROUGH ENGLISH" (5th S. ii. 308, 456) is defined by Bailey (in his *English Dictionary*, 24th edit.) to be "a custom whereby lands and tenements descended to the youngest son, who was presumed to be the least able to shift for himself." The custom is known at Stamford in South Lincolnshire. Peck, in *Desiderata Curiosa* (Lib. III., No. 1, p. 1), giving "some account of the Burleys and Wyks's, successive Lords of Burley by Stamford," mentions one Thomas Wykes, who married and had issue, Gervase, Thomas, John, Henry, and Richard. Gervase, he says, succeeded in due course to the old manor of Burley; Thomas died without issue; John had issue, Henry (afterwards Vicar of All Saints', Stamford), and Joan; Henry died without issue, but "Richard, his fifth and youngest son, *ut junior Filius habuit Terras in Stamford, qua est Consuetudo Borough English*. And had issue, John." There are other instances of the custom being acted upon in the local histories. The custom has been traced to a feudal usage, by which in olden times lords of the manor claimed the privilege of sleeping with each bride on her wedding night. The eldest son being thus presumed to be the lord's, was by Borough English excluded, and the estates settled on the youngest. Puzzled why the youngest should be preferred to others who were born between the eldest and youngest, Mr. Peck supposed that, as Stamford was a trading town, the eldest sons were either set up in business or had their portions during their fathers' lives. The feudal claim on the part of lords of manor is mentioned by Littré, *sub voce* "Cuissage," which he thus explains:—

"Droit qu'avait le seigneur de mettre la jambe dans le lit de la nouvelle mariée la première nuit des noces, et aussi, dans quelques localités, droit de coucher avec la nouvelle mariée la première nuit: droits qui d'ordinaire étaient rachetés à prix d'argent."

With this "droit de mettre la jambe dans le lit," &c., compare a curious anecdote relating to the marriage of Maximilian, "kyng of Romaynes," and the Lady Anne, daughter of "Fraunces duke of Britayne," which marriage was performed by proxy. It is to be found in Hall's *Union of the*

Houses of Yorke and Lancaster, 1550, fol. 20, Hen. VII., "The VIth yere."

JOHN TINKLER, M.A.

Arkengarth Dale.

EPITAPHIANA (5th S. iii. 100.)—In *The British Stage and Literary Cabinet* for December, 1821, is a different version of the epitaph, which gives no opportunity for the smart reply. It is said to occur at Buckleigh, Devonshire:—

"Here lie I at the chancel door,
Here lie I because I'm poor.
The farther in the more you pay,
But here lie I as hot as they."

In the same periodical for February, 1819, p. 62, the following, it is said, "may be seen" in the churchyard of Thetford, Norfolk:—

"My grandmother was buried here,
My cousin Jane, and two uncles dear;
My father perished with a mortification in his thighs;
My sister dropped down dead in the Minories;
But the reason why I am here, according to my thinking,
Is owing to very good living and hard drinking:
Therefore, good Christians, if you wish to live long,
Beware of drinking brandy, gin, or anything strong."

I have seen the latter in several collections and jest-books. Has any reader of "N. & Q." seen it at Thetford, or the other at Buckleigh? If so, I shall be glad to see the whole inscriptions, with names and dates, which are great checks to the practice of giving an air of authenticity to jokes by the names of places.

Garrick Club.

FITZTHOPKINS.

HAMMERSMITH: PYE FAMILY (5th S. iii. 107.)—Four of the ladies Pye may, I think, be set aside at once:—1. Joan, and 2. Elizabeth; these were staunch Roman Catholics, and emigrated; the head of the family took the title of Lord Kilpeck from James III. 4. Anne (Hampden's daughter); died a week before her husband, Sir Robert, in 1701. 6. Phillipa; was a first wife, and could not be a widow. Beside the four remaining ladies, there is yet another, the widow of Dr. Pye (Anne Hampden's second son); she was, if N. M. is correct, a daughter of Lord Crew, and widow of Sir H. Wright, Bart.; survived Dr. Pye many years, and was certainly a "Ladyship." The first Sir Robert was buried in the chapel he built in Tottle Fields, near his house in Orchard Street, Westminster. If this burying-ground is not swept away, there should be many memorials of the Pye family to be found there. See the account of the Pyes in Noble's *Memoirs of Cromwell*, ii. 99.

EDWARD SOLLY.

"DRUNKEN BARNABY'S FOUR JOURNEYS" (5th S. iii. 49, 120.)—MR. JACKSON may be inconvenienced by having the following information as to this work. The edition in my possession has an advertisement as prefix, dated April, 1805,

Sydney Smith disputes the accuracy of the editor of the *Examiner* in attributing to Jeremy Taylor the illustration of the round peg in the square hole, which she asserts was an original happy thought of her husband's. I have failed to trace it in his writings; nor can I find it in those of the earlier divine to whom Albany Fonblanque, who rarely made mistakes on such points, attributes the original saying.
CARENS.

LANGFORD FAMILY.—Sir Hugh Clotworthy, who died in 1630, married Mary, daughter of Robert, or Roger, Langford, of West Down, Devonshire, and of Muckmaine, co. Derry. I suppose he was of the same family as Langford of Langford, of whom an imperfect pedigree is given in Harl. MS. 5185f, 75b. Perhaps DR. DRAKE, or some other of your correspondents learned in Devon pedigrees, will be able to oblige me with information respecting Lady Clotworthy's mother and other direct ancestors.
Y. S. M.

ORDRE POUR LE MÉRITE.—Dr. Russell, in *My Diary during the Last Great War*, after describing an interview with Count Bismarck, adds the following circumstance:—"I was rather amused at his buttoning, in his hurry, the badge of the order 'Pour le Mérite' inside his coat." The *Academy*, lately, in an article on the acceptance by Carlyle of that honour, and his non-acceptance of that of G.C.B., says, "In Germany, not even Bismarck is a knight of the Ordre pour le Mérite." Which of these statements is the correct one?
WM. MORRIS.

Low Wray, Windermere.

JUDICIAL COSTUME.—Frequenters of Westminster Hall must observe the variety of costume worn by the Common Law Judges. On some occasions they wear plain silk gowns; on others, black cloth robes, trimmed with white fur; on others, blue cloth, with hoods and cuffs of a kind of "shot" plush; and on certain days, their state robes of scarlet and ermine, with full-bottomed wigs. What rules govern these changes of costume?
H. H. W.

THE LEGEND OF THE MAGIC RING.—What is this legend; it has some connexion with Combe Sydenham, Somerset?
C. H. POOLE.

"MAW" AND "CUT-THROAT."—Is anything known of old English games so called?
E. H. A.

REV. — WELSHMAN, VICAR OF BANBURY, 1728.—I am anxious for information as to his parents and wife.
EDWARD PEACOCK.
Bottesford Manor, Brigg.

Replies.

THE MARRIAGE OF THE ADRIATIC AND THE DOGE OF VENICE.

(5th S. ii. 287, 454, 478; iii. 17.)

The meaning, as well as the romance, of this ceremony would be quite lost if we are to imagine a string tied to the ring by which it was subsequently pulled out of the water. The flinging of the ring into the bosom of the bride, there to abide, and to be for ever retained as a token of perpetual dominion, would lose all its import if it was to be plucked up again immediately the Doge had turned his back. The sea performed her part of the ceremony by the acceptance and retention of the symbol of marriage. I well recollect reading some years ago a tale or legend, translated from the Italian, in which an omen of the downfall of the Venetian Republic was recognized in the serving up, at the Doge's table, of a fish containing the ring of the last year's marriage. Probably this was only a romance, but it serves to show the light in which the ceremony was regarded. I have failed to recall to mind the pages wherein I read this tale, but it will most likely be identified by other of your correspondents. I think MR. GAUSSERON will meet with equal difficulty, either in the region of fact or fiction, in establishing his "string" theory.

I have before me a folio volume, entitled *Superstitions Anciennes et Modernes*, published at Amsterdam in 1733. The compiler quotes from an older author (De Villamont, lib. i. cap. 34) the precise expressions attributed to Pope Alexander III. when instituting the ceremony:—

"Tum enim Ziano Pontifex annulum de manu sua detractum obtulit dicens, 'Auctoritate mea hoc annulo fretus Oceanum tibi subicies, et quotannis tibi posterisque eo die quo hanc victoriam pro Ecclesie defensione obtinuisti, despondebis mare: uti sciant omnes maris tibi dominium concessum, quia Sedis Apostolicæ tuendæ curam et studium fideliter suscepisti. Sit hoc tibi quasi pignus benedictionis et secundæ sortis in futurum.'

A very lengthy extract is also given from *La Ville et la République de Venise*, describing the whole ceremony, from which it seems worth while to quote the following particulars:—

"Lorsque le Bucentaure est arrivé à l'entrée de la mer, les Musiciens chantent quelques motets, le Patriarche de Venise, qui suit dans une grande barque, bénit la mer, et le Bucentaure lui présentant la poupe, on abat le dossier de la chaise du Doge, lequel recevant du Maître des cérémonies une bague d'or toute unie, qui pèse environ deux pistolets et demie, la jette dans la mer dessus le gouvernail, après avoir prononcé distinctement ces paroles:—'Desponsamus te, mare, nostrum in signum veri, perpetuæ dominii.' L'on jette ensuite des fleurs et des herbes odorantes sur la mer, pour couronner (dit-on) l'épousée."

Neither of these extracts seems to favour the notion of the same ring being used year after year; such an important item of the ceremony, if it

f.28v

existed, could hardly have escaped being chronicled by Villamont and the other author, and the ring would not have been characterized as "*une bague*." Nor does the suggestion of H. K., that the Adriatic was the bridegroom, and not the bride, receive any confirmation; indeed, the crowning of the bride with flowers at the conclusion of the ceremony points to the correctness of the prevailing theory. Surely Byron, with his passionate love for Venice and the Venetians, would have been careful to perpetuate a truthful and exact impression, when he wrote at Venice the memorable lines:—

"The spouseless Adriatic mourns her lord;
And, annual marriage now no more renewed,
The Bucentaur lies rotting unrestored,
Neglected garment of her widowhood!"

MR. MANUEL asks, "When was this ceremony (performed for the first time in June, 1177) discontinued?" The Adriatic became widowed of her lord in 1797, when Bonaparte seized Venice; but the Venetians were not always content with merely a twelfth-century origin of this custom. In the *Sketches of Venetian History*, published by Murray in 1831, I read that Marco Foscarini (*Della Letteratura Veneziana*, lib. ii. p. 216) has claimed a much earlier birth for the espousal of the Adriatic; he finds traces of it in Dandolo's Chronicle, under the Dogeship of Pietro Urseolo II., towards the close of the tenth century.

J. CHARLES COX.

Hazelwood, Belper.

Permit me to correct an oversight, or, more properly, a culpable error, which I committed in my reply, 5th S. ii. 454. I there wrote, "I find no mention of the custom in Cardinal Contarini's *De Venetorum Republicâ*"; whereas, I observe that Contarini not only mentions, but gives a full account of it. His words (which I will afterwards translate) are:—

"Ascensionis quoque die festo, quo die nundinæ Venetiis fiunt, adhibentur a principe hi, qui virilem ætatem attigerunt. Hi item summo mane deducunt domo ducem, unâque cum eo navem conscendunt, quam ornatissimè ad hos usus constructam, quam Veneti Bucentaurum vocant. Postquam verò æstuarium sunt egressi cum primum liberum apertumque mare intueri licet, antiquorum Pontificum beneficio, qui hanc rem publicam pro rebus quamplurimis fortiter et egregiè gestis contra communes nominis Christiani hostes, honestare voluerunt, princeps jacto annulo aureo in mare, inquit totidem fere verbis, se in signum veri perpetuique imperii eo annulo mare desponsare."

"At the Feast of the Ascension, which is a fair day at Venice, all those who have attained to manhood are presented to the Prince. These, at full morning, conduct the Duke from his palace to a vessel splendidly fitted up, and named by the Venetians *Bucentaurus*. On this they all embark, and put to sea. As soon as they have passed the straits and come in sight of the main ocean, the Duke drops a gold ring into the water, and says almost always the same words: 'With this ring I espouse thee in token of a true and perpetual dominion.' This custom arose from a privilege granted by the ancient Popes to the Venetians, as a mark of honour for their many and

illustrious acts of zeal against the common enemies of the Christian Faith."

As a Venetian by birth, and holding high office in the state, the authority of Contarini is beyond all question. The treatise from which the above extract is quoted shows him to have been thoroughly acquainted with all the customs and institutions of his country, and abounds in information, curious, interesting, and instructive. I am not aware that it has ever appeared in an English dress, or that it or its author is very much known. If not, they deserve to be; and for the sake of English readers, I should be glad to see a translation of all his works. He was the bosom friend of Cardinal Pole, and together with him received an unmistakable hint that their room at the Council of Trent would be quite as agreeable as their company.

As Contarini does not say that the ring was recovered, my literary friend, MR. RALPH N. JAMES, may feel pretty fairly satisfied that there is but very slender authority for the assertion that it was.

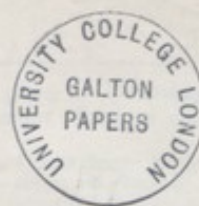
EDMUND TEW, M.A.

A full account of this marriage is given by Richard Lassels in his *Voyage of Italy*. He was at Venice about 1650. Lassels says:—

"*The Assenza*. I happened to be at Venice thrice at the great sea Triumph, or feast of the Ascension, which was performed thus. About our eight in the morning, the Senators in their scarlet robes meet at the Doges Pallace, and there taking him up, they walk with him processionally unto the shoar, where the Bucentoro lyes waiting them; the Popes Nuncio being upon his right hand, and the Patriarch of Venice, on his left hand. Then ascending into the Bucentoro, by a handsome bridge thrown out to the shoar, the Doge takes his place, and the Senators sit round about the gally as they can, to the number of two or three hundred. The Senate being placed, the anchor is weighed, and the slaves being warned by the Captain's whistle and the sound of trumpets, begin to strike all at once with their oars, and to make the Bucentoro march as gravely upon the water, as if she also went upon cioppini." Thus they steer for two miles upon the Laguna, while the music plays, and sings Epithalamiums all the way long, and makes Neptune jealous to hear Hymen called upon in his Dominions. Round about the Bucentoro flock a world of Piottas and Gondolas, richly covered overhead with sumptuous Canopies of silks and rich stuffs, and rowed by watermen in rich liveries as well as the Trumpeters. Thus forrain Embassadors, divers noblemen of the country and strangers of condition wait upon the Doges gally all the way long, both coming and going. At last the Doge being arrived at the appointed place, throws a Ring into the sea, without any other ceremony, than by saying: *Desponsamus te, Mare; in signum perpetui domini.* We espouse thee, O Sea, in Testimony of our perpetual dominion over thee: and so returns to the Church of S. Nicolas in Lio (an Island hard by) where he assists at High Mass with the Senate. This done he returns home again in the same state, and invites those that accompanied him in his gally to dinner in his pallace: the preparations of which dinner we saw before the Doge was got home.

* The high shoes worn by the Venetian ladies at that time.

f.29



VISUALISED NUMERALS.

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VISUALISED NUMERALS.

I HAVE lately been occupied in eliciting the degree and manner in which different persons possess the power of seeing images in their mind's eye, and am collecting a large and growing store of materials, partly of verbal answers made by friends to my inquiries, but principally by means of written replies to a printed list of questions that I am distributing. The subject bears in many ways upon psychological and ethnological studies, and I should be glad if the present memoir upon one particular branch of it should induce correspondents to furnish me with authentic information of the kind I seek.

The various ways in which numerals are visualised is but a small subject, nevertheless it is one that is curious and complete in itself. My data in respect to it are already sufficiently numerous to be worth recording, and they will serve to show that parallel results admit of being arrived at in other directions.

I may begin by mentioning one or two general experiences. I have been astonished to find how superior women usually are to men in the vividness of their mental imagery and in their powers of introspection. Though I have admirable returns from many men, I have frequently found others, even of the highest general ability, quite unable for some time to take in the meaning of such simple questions as these. "Think of some definite object,—say your breakfast table, as you sat down to it this morning, and consider carefully the picture that rises before your mind's eye. Is the image dim, or fairly clear? Is its brightness comparable to that of the actual scene? Are the objects sharply defined? Are the colours quite distinct and natural, &c.?" On the other hand, I find the attention of women, especially women of ability, to be instantly aroused by these inquiries. They eagerly and carefully address themselves to consider their modes of thought, they put pertinent questions, they suggest tests, they express themselves in well-weighed language and with happy turns of expression, and they are evidently masters of the art of introspection. I do not find any peculiar tendency to exaggeration in this matter either among women or men; the only difference I have observed between them is that the former usually show an unexpected amount of intelligence, while many of the latter are as unexpectedly obtuse. The mental difference between the two sexes seems wider in the vividness of their mental imagery and the power of introspecting it, than in respect to any other combination of mental faculties of which I can think.

Another general experience is that the power of seeing vivid images in the mind's eye has little connection with high or low ability or any other obvious characteristic, so that at present I am often puzzled to guess from my general knowledge of a friend, whether he will prove on inquiry to have the faculty or not. I have instances in which the highest ability is accompanied by a large measure of this gift, and others in which the faculty appears to be almost wholly absent. It is not possessed by all artists, nor by all mathematicians, nor by all mechanics, nor by all men of science. It is certainly not possessed by all metaphysicians, who are too apt to put forward generalisations based solely on the experiences of their own special ways of thinking, in total disregard of the fact that the mental operations of other men may be conducted in very different ways to their own.

I have much to say on this and cognate topics which I pass by on the present occasion, that I may at once proceed to the subject of this paper. The first section of it is of minor interest and may be quickly dismissed. It is the power of mentally seeing numerals, of holding them fast in the field of view, of perusing them when there, and of working sums by mental imagery in the same form as that in which they are usually carried on with pen and paper.

Here is a well marked case of the power of visualising numerals. The writer is an office-bearer of one of our scientific societies :—

1. If words such as fifty-six be spoken, I most clearly, easily and instantly visualise the figures. I do so almost automatically. I perceive that when I speak the word "thousand" or hear it spoken, the figures at once group themselves together. I find it quite impossible to think of the date of a year without remembering and visualising the figures, though I express myself in words. The figures are always printed; in type and size they resemble those commonly used for the headings of newspapers. I cannot, however, appreciate a back-ground, the figures appear simply in space. I think that by practice and concentration I could hold fast many figures.

The next is by a friend who has a most tenacious memory for numerical administrative details :—

2. I can see and mentally retain many figures, and can multiply four figures by four figures without practice, the operation proceeding visibly in my mind like a sum upon paper.

The following is by a school-boy who is a near relation of a man of the highest mark in science :—

3. I can visualise a fairly long line of figures, and I do mental sums by putting down the working of them in my mind's eye, up to square roots with two figures in the root, and in algebra, to simple quadratics.

A schoolmistress writes :—

4. I can retain several figures in my mental view and work examples, seeing every figure in the process.

A late Fellow of Trinity College, Cambridge, states :—

5. All arithmetical processes performed mentally, are exactly the processes I should perform on paper.

It must not, however, be imagined for a moment, that the processes of mental arithmetic are necessarily wholly dependent on the faculty of visualising numerals. Here is a good instance to the contrary. The writer is the author of a valuable work on a branch of Mental Philosophy :—

6. The numerals are merely ideal sounds [to me], not ideal sights in any way. I have, or used to have, very considerable powers of mental arithmetic and mental algebra, but always used in thought the sounds of the signs. In the process I always forgot every step as soon as I had reached the result of that step.

This last sentence is exceedingly suggestive, and reminds one that many so-called "unconscious" acts are not really unconscious, but are acts characterised by an exceedingly brief and evanescent period of consciousness.

The processes of mental arithmetic are commonly dependent on the representation of more than one sense, as in the following instance :—

7. I can multiply with effort four figures by four; but partly only by images, chiefly by memory.

I am as yet unable to determine the percentage of persons who possess in the various degrees, the power of visualising numerals, because my returns are chiefly derived from persons who are exceptionally gifted. An excellent way of obtaining average returns to psychological questions would be by the help of schoolmasters, who have an admirable field of psychological research immediately before them, which they wholly neglect. If a hundred boys in a large school could be set simultaneously to answer such questions as those I am putting, after their masters had clearly explained their purport to them, and had taken common precautions to insure independent replies, and to sift away lax and untrustworthy statements, the thing would be effected by a single stroke, and both boys and masters would enjoy the satisfactory feeling of having accomplished a substantial piece of scientific research.

I have many curious cases of colour association with the various numerals, but shall only give a very few instances of them, and those incidentally, in the present paper. I shall also abstain at present from speaking of the many different ways in which dates, days of the week, and months of the year are apt to be visualised.

The topic to which I especially wish to direct attention, is the innate and hereditary tendency of certain persons to see numbers in definite and constant arrangements or schemes, whose various characters will be easily understood from the extracts I am about to give and by the accompanying illustrations, which are reductions to a small scale of the pictures I have received, with a necessary sacrifice of detail in a few cases.

The simplest instances do not seem to be the commonest; thus, I have very few indeed that could be classed with the following:—

8. When a child, I counted by means of imaginary cards from ace to ten. My little boy in the same way, used an imaginary domino.

Or this:—

9. I picture numbers in groups, thus 5 is sometimes $\begin{smallmatrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{smallmatrix}$, sometimes $\begin{smallmatrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{smallmatrix}$, 8 is $\begin{smallmatrix} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{smallmatrix}$, 7 is $\begin{smallmatrix} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{smallmatrix}$, 100 is ten rows of ten.

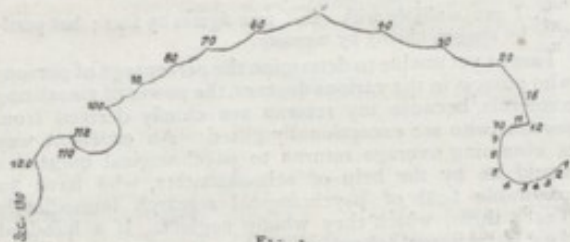
I may as well give the remainder of this communication here; it is written by a lecturer upon mental philosophy. He says:—

10. The numerals 1, 2, 3, 4, &c., from the part they play in the multiplication table, have been personified by me from childhood. 9 is a wonderful being of whom I felt almost afraid, 8 I took for his wife, and there used always to seem a fitness in 9×9 being so much more than 8×8 . 7 again is masculine; 6, of no particular sex but gentle and straightforward; 3, a feeble edition of 9, and generally mean; 2, young and sprightly; 1, a common-place drudge. In this style the whole multiplication table consisted of the actions of living persons, whom I liked or disliked, and who had, though only vaguely, human forms.

The schemes in which numerals appear are usually fantastical and sometimes very elaborate. I will (by permission) give the name of the writer of the first instance about to be adduced, on account of the hereditary interest that is attached to it. It is by Mr. George Bidder, Q.C., a son of the late eminent engineer, who was known in early life as the calculating boy. Mr. George Bidder inherits much of his father's marvellous power of mental arithmetic, being able, though not with equal precision and rapidity, to mentally multiply fifteen figures by another fifteen figures. This faculty has been again transmitted, though in an again reduced degree, to the third generation. (See letter in the *Spectator*, December 28, 1878, also the early numbers of that paper in 1879.)

He writes to me as follows:—

11. One of the most curious peculiarities in my own case, is the arrangement of the arithmetical numerals. I have sketched this to the best of my ability. Every number (at least within



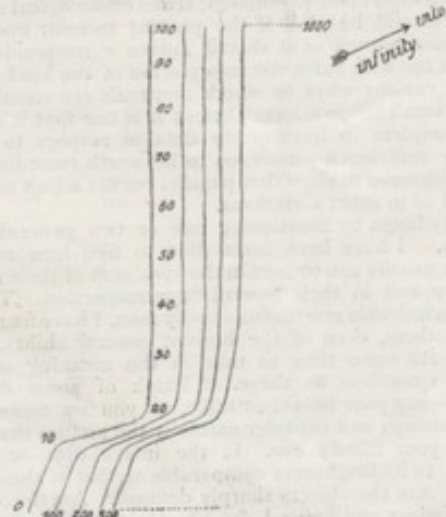
the first thousand, and afterwards thousands take the place of units) is always thought of by me in its own definite place in the series, where it has if I may say so, a home and an individuality. I should, however, qualify this by saying that when I am multiplying together two large numbers, my mind is engrossed in the operation and the idea of locality in the series for the moment sinks out of prominence. You will observe that the first part of the diagram roughly follows the arrangement of figures on a clock-face, and I am inclined to think that may have been in part the unconscious source of it, but I have always been utterly at a loss to account for the abrupt change at 10 and again at 12.

It occurs to me that the change is probably due to the wrench given to the mental picture of the clock dial in

order to make its duodecimal arrangement conform to the decimal system, and that the same action is repeated at 110.

The next diagram exhibits the most compact of all the mental schedules which I have as yet received:—

12. The representation I carry in my mind of the numerical series is quite distinct to me, so much so that I cannot think of any number but I at once see it (as it were) in its peculiar place in the diagram. My remembrance of dates is also nearly entirely dependent on a clear mental vision of their *loci* in the diagram. This, as nearly as I can draw it, is the following:—



It is only approximately correct (if the term "correct" be at all applicable). The numbers seem to approach more closely as I ascend from 10 to 20, 30, 40, &c. The lines embracing a hundred numbers also seem to approach as I go on to 400, 500, to 1,000. Beyond 1,000 I have only the sense of an infinite line in the direction of the arrow, losing itself in darkness towards the millions. Any special number of thousands returns in my mind to its position in the parallel lines from 1 to 1,000. The diagram was present in my mind from early childhood; I remember that I learnt the multiplication table by reference to it, at the age of seven or eight. I need hardly say that the impression is not that of perfectly straight lines, I have therefore used no ruler in drawing it.

Some writers have somewhat rashly asserted that our idea of numbers is always based on our ten fingers and ten toes. There are, however, other forms in use by various nations than those of decimal arithmetic, and the last paragraph of the foregoing seems sufficient to show that the finger and toe hypothesis is not universally true. This opinion was strongly maintained by the lady writer of the following remarks, whose imagery dates beyond her earliest recollections:—

13. The annexed column [a portion only of it is represented here] represents how I see the numbers from 1 to 140. There is no break up to 30, and none from 90 to 130, but I think this is because the three figures at 100 make a sort of break of themselves. After 140 they go on regularly, but farther off. The figures are not one *above* the other, as they appear in the diagram, but are one *beyond* the other, stretching away into space. They are about half an inch long, of a light grey colour on a darker and brownish grey ground.

The next example is very curious; the diagram which accompanies it is carefully and minutely drawn on a large sheet of paper and looks like a detailed route survey made by a careful traveller. I have been obliged to treat it much as a map maker would treat such a survey.

&c.
41
39 40
38
37
36
35
34
33
32
31
29 30
28
27
&c.

FIG. 3.

14. I find it very difficult to represent my visualisation of numerals diagrammatically. I scarcely ever see the lower numbers written; I simply know exactly where 6, 7, 4, &c., are to be found. I cannot properly represent the crowding of numbers in some places, nor the edgewise positions they occupy, nor can I at all adequately express the compactness and yet extent of the line. On either side of it there seems to be indefinite space. But there is a boundary at 1, beyond which I have to look for minus quantities. After 108 the notion of place becomes hazy and indistinct, though I can visualise the higher numbers in respect to their position, if I make the effort. I think of a million as very far off and high up. When multiplying for example 5×6 , I know instantly the spot where the product will

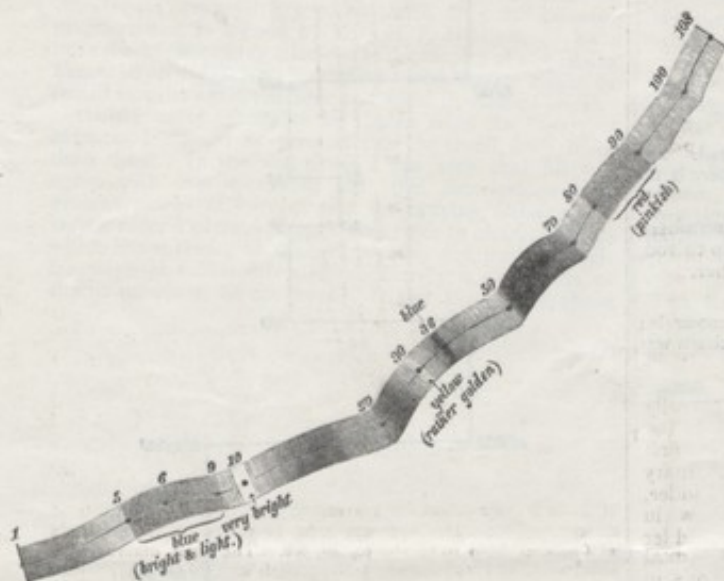


FIG. 4.

be, and look to see what number it is. But if asked to multiply 14×17 I first go up to the place whereabouts I expect it will be, and am baffled. I do not know where to look. In the coloured parts, it is the place rather than the number that is coloured, and the number is connected with colour because it happens to be in that place. The brightness and darkness may possibly in the lower numbers have some connection with the events of my life, the numbers which correspond to years of my age which were eventful, being as a rule much more distinct. As a child I had great liking for the number six, arising I fancy from a keen desire to be six years old. I had also an excessive love for blue, so perhaps this accounts for the connection between them. N.B.—I learnt arithmetic in a thorough old-fashioned unintelligent style, the first step being to learn to count without the least conception as to what the numbers meant.

The writer of the foregoing has two sisters and a brother. One of the sisters sees numerals in a differently arranged diagram, and the figures themselves are coloured, (1) black, (2) white, (3) yellow, (4) red, (5) greenish yellow, (6) blue, (7) black, (8) red, (9) grey, (10) gold. The other sister has a fainter, but still a decided tendency to see figures in a mental diagram. It is without colour but has variations of shade. The brother has a definite diagram of numbers arranged in a line sloping upwards to the right as far as 120, and absolutely devoid both of colour and variations of shade. No trace of these colour-peculiarities has yet been made out on either the father or the mother's side, but there is a tendency in both father and mother to visualise in diagrams.

The effects of heredity are also strongly marked in the next set of instances, consisting of two families of cousins. A sister in the first family writes:—

15. From the very first I have seen numerals up to nearly 200, range themselves always in a particular manner, and in thinking of a number it always takes its place in the figure. The more attention I give to the properties of numbers and their interpretations, the less I am troubled with this clumsy framework for them, but it is indelible in my mind's eye even when for a long time less consciously so. The higher numbers are to me quite abstract and unconnected with a shape. This rough and untidy production is the best I can do towards representing what I see. There was a little difficulty in the performance, because it is only by catching oneself at unawares, so to speak, that one is quite sure that what one sees is not affected by temporary imagination. But it does not seem much like, chiefly because the mental picture

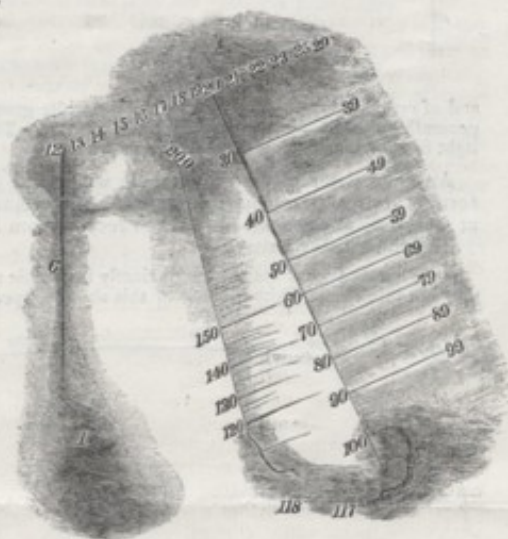


FIG. 5.

never seems on the flat but in a thick, dark grey atmosphere deepening in certain parts, especially where 1 emerges, and about 20. How I get from 100 to 120 I hardly know, though if I could require the figures a few times without thinking of them on purpose, I should soon notice. About 200 I lose all framework. I do not see the actual figures very distinctly, but what there is of them is distinguished from the dark by a thin whitish tracing. It is the place they take and the shape they make collectively which is invariable. Nothing more definitely takes its place than a person's age. The person is usually there so long as his age is in mind.

Another sister says:—

16. I always see figures ascending in a directly perpendicular line in front of my eye [according to the sketch and memorandum sent in illustration, which it is hardly necessary to reproduce, the 1 stands opposite to the eye, and the scale reaches vertically up to 1,000]. Then all becomes vague, but I know that the thousands and tens of thousands are not in the same perpendicular line, and I believe they turn to the left hand.

A maternal aunt of these ladies "sees figures in a diagram," which has not yet reached me, and the other family that I am now about to mention are the children of a maternal uncle. There are three sisters and a brother who have the same faculty in varying degrees.

The brother writes from Cambridge:—

17. Numerals are always pictured by me in a straight line from left to right. They are black, on a ground varying in illumination, which is bright up to 10, then getting very shady from 10 to 20; 20 to 40, bright; 40 to 60, moderate; 60 to 80, shady. Shadiest are from 10 to 20, 60 to 80 or 90, 1,000 to



2,000. The millions are in a vague, bright distance to the right.

One of the sisters writes:—

18. Figures present themselves to me in lines [as in the annexed diagram]. They are about a quarter of an inch in length,

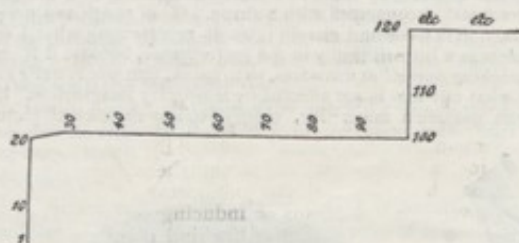


FIG. 6.

and of ordinary type. They are black on a white ground. 200 generally takes the place of 100 and obliterates it. There is no light or shade, and the picture is invariable.

Another sister gives a picture in which the numbers form a vertical line from 1, opposite to the eye, up to 100, at which point the scale appears to recede from her.

The third sister writes:—

19. Figures always stand out distinctly in Arabic numerals; they are black on a white ground, of this size [the specimen was



FIG. 7.

clear and round, and in rather large ordinary handwriting], but the numeral 19 is smaller than the rest.

It is curious that the lines of most of the diagrams I have thus far given should be so feeble and, to appearance, wandering, although as a matter of fact they are firmly fixed. Artists speak of the "leading lines" in a picture, and commend pictures in which the leading lines are graceful. I have little doubt that one of the reasons why minds vary in artistic power is that the leading channels in the blank schedules of their minds vary in character. I should expect that natural artists might be found whose habit was to visualise numerals not in shaky lines, but in bold and beautiful curves. In the instances I am about to give, especially in the first of them, there is more tendency to geometric precision, and I should be most curious to learn (by actual and careful test) whether or no such cases are generally correlated with a true eye to straightness, squareness, and symmetry.

In the following example the numbers are not associated with visual figures, but with points on an ascending and descending scale, which is a pure line having neither breadth nor colour. It is described as perfectly flexible and extensible, much, I suppose, as if it were printed on a strip of india-rubber sheeting, and it is applicable to the measurement of large distances or small ones, to fractions, and to straight lines or curves. A very curious description is given in detail, which I will not here reproduce, of the way in which the scale is used in mental arithmetic. The writer adds:—

20. The accompanying figure lies in a vertical plane, and is the picture seen in counting. The zero point never moves, it is *in* my mind; it is that point of space known as "here,"

while all other points are outside or "there." When I was a child the zero point began the curve; now it is a fixed point in an infinite circle . . . I have had the curious bending from 0 to

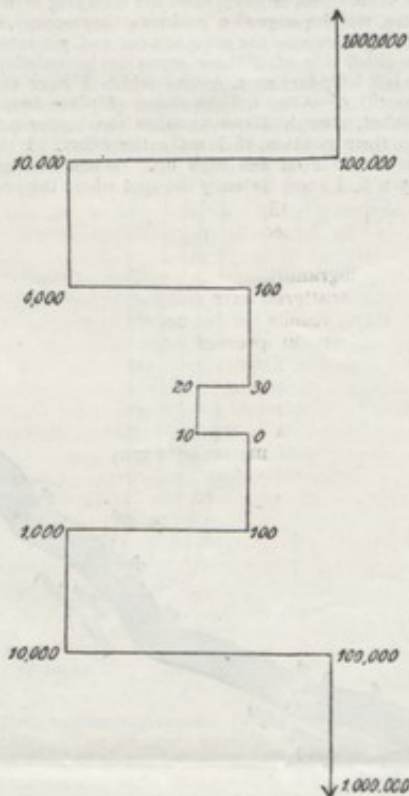


FIG. 8.

30 as long as I can remember, and imagine each bend must mark a stage in early calculation. It is absent from the negative side of the scale, which has been added since childhood.

Another correspondent sees figures in a circle, having 0 at the right hand of its horizontal diameter and 100 at the left hand. Positive numbers are reckoned from 0 to 100 from the right, over the top to the left, and negative numbers the other way. The same takes place with figures between 100 and 200, 200 and 300, &c.

Another correspondent sees them for the most part in a regular row like park palings. The description and sketch are as follows:—

21. As far as 12 the numerals appear to be concealed in black shadow; from 12 to 20 is illuminated space, in which I can distinguish no divisions. This I cannot illustrate, because it is simply dark and light space, but with a tolerably sharp line of division at 12. From 20 to 100 the numerals present themselves as follows, but less distinctly:—

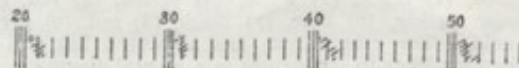


FIG. 9.

An account is appended of the way in which simple mental arithmetic is effected by this arrangement, which at present I pass over.

I will conclude my list with a statement written by a mathematical astronomer of rapidly rising reputation, whose "practice of working arithmetic" mentioned in the concluding paragraph must be understood to signify "performing masses of laborious calculations":—

22. The numbers 1, 2, 3, 4, &c., are in a straight row, and I

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am standing a little on one side. They go away in the distance, so that 100 is the farthest number I can see distinctly. It is dusky grey, and paler near to me; up to 20 it occupies a disproportionate size. There are sorts of woolly lumps at the tens. These pictures are not of such frequent occurrence in my mind as formerly. The practice of working arithmetic has rather expelled them.

Since the foregoing remarks were first sent to the printer, many additional cases have reached me, which I regret to have no space left to include. One very interesting group consists of three cousins and the daughter of one of them. Another case was brought to my notice by a correspondent; it was published in the *Atlantic Monthly*, February, 1873, p. 199, with an accompanying diagram, and is signed by Miss H. R. Hudson. I have little doubt that many allusions to the faculty of visualising numerals in diagrammatic and coloured shapes might be found to exist scattered here and there in various books.

Of the many results to be drawn from the foregoing extracts, I do not at present care to dwell upon more than these. In the first place I am sure that all will agree with me in saying that the descriptions bear evident marks of careful and trustworthy observation. In the second place, although they refer to characteristics which the majority of my readers may not possess, their language is sufficiently clear to convey a good idea of that is meant to be conveyed. In the third place, these

independent statements powerfully corroborate and explain one another. Therefore, although philosophers may have written to show the impossibility of our discovering what goes on in the minds of others, I maintain an opposite opinion. I do not see why the report of a person upon his own mind should not be as intelligible and trustworthy as that of a traveller upon a new country, whose landscapes and inhabitants are of a different type to any which we ourselves have seen. It appears to me that inquiries into the mental constitution of other people is a most fertile field for exploration, especially as there is so much in the facts adduced here, as well as elsewhere, to show that original differences in mental constitution are permanent, being little modified by the accidents of education, and that they are strongly hereditary.

I trust, therefore, that the publication of this memoir may prove to be the means of inducing some persons to furnish me with information of the kind I am now seeking. I want to hear of well-marked and properly-authenticated instances of persons who are able to recall, or represent to their imagination, with great vividness, either sights, sounds, smells, or tastes, and to obtain information that may throw light on the peculiarities of the representative faculty in different families and races.

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THE ANTHROPOLOGICAL INSTITUTE.—On Tuesday night the first meeting of the Anthropological Institute for the new session was held at its rooms, 4, St. Martin's-place, Trafalgar-square, W.C., Mr. Hyde Clarke, V.P., in the chair. Mr. R. W. Felkin, medical missionary, well known for his travels in Central Africa, introduced a coloured youth, a native of Darfur, in the Soudan, at present the scene of the insurrection kindled by the False Prophet. The lad, ten years of age, two of which he had spent in this country, looked sharp and intelligent. Mr. Francis Galton, F.R.S., exhibited and explained some apparatus contrived by himself, with a view of testing the muscular and other senses. This apparatus consisted of a box, something like a backgammon-board, containing trays of weights arranged for measuring the relative delicacy of the muscular sense (the sixth added by modern psychological science to the five recognized by the ancients) as existing in different persons. The principle Mr. Galton claimed as a new one. It established, he said, a graded scale of sensitivity, and was applicable, by means of analogous methods, to testing the delicacy of other senses, such as taste and smell. He employed small weights arranged in sequence, which were numbered in succession 1, 2, 3, &c., and differed by equally perceptible variations, as calculated by Weber's law. Hence if a person, A, could just distinguish, say, 1 and 3, he could also distinguish between any two weights two grades apart, as 2 and 4, 3 and 5, etc. Again, if another person, B, were twice as obtuse as A, he would be able to distinguish one grade only where A could distinguish two. In other words, he would be only just able to distinguish between weights 1 and 5, 2 and 6, and so on. Generally, the number of grades between the weights that any person could distinguish had to be found by trials, and that number became the measure of the coarseness of his sensitivity. The weights used were blank cartridges, filled with shot and wadding, care being taken that the shot should be equally distributed. They were arranged in trays, each tray holding a sequence of three. The person tested had to arrange the cartridges in the tray handed to him in the true order of their weights. Some provisional results of the plan were mentioned. One was that men had, on the whole, more delicacy of discrimination than women; another that intellectually able men had more than other men. It further appeared that women sensitive to a morbid degree were not remarkable for their powers of discrimination. Sensation was produced in them by a feeble stimulus and so was pain, but the intervening numbers of just perceptible differences did not appear in their case to be exceptionally large. Professor Croom Robertson, Mr. Sully, Dr. Mortimer Granville, Dr. Mahomed, Mr. Roberts, Professor Thane, Dr. Alfred Tylor, and other speakers of authority joined in the conversation which followed, and Mr. Galton replied to various questions proposed to him in the course of the discussion.

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189 *5*

BESIDES the study which Mr. Francis Galton has given to the identification of criminals, and which is referred to elsewhere, he has done much good work as a geographer, and he was the first to attempt to make charts of the weather on a large scale, and to establish the theory of anti-cyclones. Mr. Galton, who is a cousin of the late Charles Darwin, is best known by his famous work "Hereditary Genius," which has had a powerful influence on the theories derived from the work of his distinguished relative. He is a prominent member of the Royal Society, of which he has been vice-chairman, and he is chairman of the committee which manages the observatory at Kew.

Close on Saturdays at 2 o'Clock.

F. Galton Page 2 - 24 -

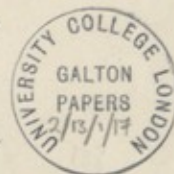
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SPECIAL EXTRA NUMBER FOR COMMEMORATION.

THE OXFORD MAGAZINE

D.C.L

A Weekly Newspaper and Review.



THURSDAY, JUNE 21, 1894.

OUR POET.

"Lor, Sir, we keep a poet!"—MOSES.

THE COMMEMORATION NUMBER!—So our poet once again
At the editorial summons grasps the customary pen;
What matter though his hair be gray, what matter though
he's old?
For the nonce his years are twenty, and his curling locks
are gold.

Why, of course, you know, she's coming, coming down
from town to-day,
And, although she wouldn't promise, he'll prevail on her
to stay,
When he proves past refutation that 'twill simply spoil it all,
If she doesn't stop at least for the triennial College Ball.

So he meets her at the station, and she blushes as they
meet,
And he walks beside her proudly, as they wander down
the street.
Dances, picnics, garden-parties, they of course attend to-
gether,
Not a cloud appears to darken their Commemoration
weather.

At the picnics some old fellow takes the chaperon and
the "grub,"
Sculling slowly and sedately in a patriarchal tub;
But the poet (artful fellow!) finds it easy to persuade her
To entrust her pretty person to a "built-for-two" Canader.

When it comes to disembarking, there's a pressure of her
hand,
And a quick shy glance in answer, which he can't mis-
understand.
"Yes, I'll speak to her this evening, win or lose her once
for all,
As we wander through the gardens, while they're dancing
in the hall."

Now's the favourable moment, and I venture to confess,
And to ask her "Can she—does she—?", and I hear
her whisper, "Yes!"
"O my darling—!", and I stoop to—"Who's that knock-
ing at the door?"
"Mr. Jones, Sir, wants them verses, as we go to press at four!"

So the vision fled for ever, and the dreamed return to
youth,
As a glance within the mirror brought me back to sober
truth;
So (as Bunyan, you'll remember, wrote before me) I awoke.
And behold—the pipe-born fancy vanished on the wings
of smoke.
S. T.

ACTA COMMEMORANDA.

COMMEMORATION weather no doubt deserves the first place
in our annals. It has been melancholy and sad. One fine
day only have we had; the rest of our gaieties have been damp
and gloomy. We hear that many courageous ladies braved
the perils of the storm upon the deep on Monday: we only
hope that they have not been all ill since. It was no doubt
a result of the rain on the canvas of the tent where the large
balls were held that the heat was terrific. Fortunately the
halls of the Schools provided some refuge, the rarefied air of
high learning still pervading them.

Monday night is usually a favourite one for College dances,
but this year there was only one, that at Wadham; there the
dance is an annual institution, and it is a little hard to find
any new remark to make on an event which we have so often
noticed before. There was, however, a decided innovation;
the cruel weather broke down a twenty-five years' tradition
of "fine Monday nights in Commem." and sorely taxed the
resources of the Committee, who have always relied on the
garden (with its illuminations) to furnish places for sitting out
and topics of talk for the dullest. However, the energy of
the stewards had prepared for the emergency: the illuminated
covered way to the staircases provided a small substitute for
the gardens, and College rooms were found to furnish as
many quiet corners as seats under cedar and lime. The
floor was in excellent condition, the music good, though at
times a trifle wild, and dancing went on vigorously till the
inexorable rule was enforced which ends the dance at 1.30
"or thereabouts."

The Masonic Ball was held with the usual solemnities.
The ladies were splendid in many-coloured raiment, though
the hues of last year have not been equalled. But, as usual,
the ladies were on this occasion eclipsed by the splendour of
the Masonic robes. The Brothers had hard work all the
evening changing their robes with indefatigable energy. We
are told by a profane person that the "arch of steel" was
not as impressive as it might have been, but we hesitate to
insert such an audacious criticism, lest we should bring upon
ourselves the wrath and secret revenge of the great brother-
hood, and we have no doubt that the sight was splendid.

A thoroughly successful and most elegant dance was given
by Trinity College on Tuesday night. There were about three
hundred guests, and dancing took place in a spacious marquee
erected for the purpose in the College gardens. Among the
many points for admiration two struck us as especially note-
worthy, firstly the extremely beautiful effect created by the
Chinese lanterns and fairy lights illuminating the Lime Walk,
and giving it the appearance of an endless vista of brightness
and scintillating light; and, secondly, the beauty and taste-
fulness of the supper-table decorations, which consisted of
centre strips of *eau-de-Nile* art-muslin surrounded by roses
of the most choice description. In a word, we shall not be
exaggerating when we say that the ball as a whole was one
of, if not absolutely the best that we have attended during
a protracted experience of Commemoration entertainments.

THE HONORARY DEGREES.

MOST of those whom the University has honoured yesterday need no introduction. The Earl of Kimberley, K.G., is an Eton and Christ Church man, who took a First in Greats in the forties, is at home in Oxford, as he has long been in Liberal Governments. The Foreign Office, the India Office, Ireland, the Colonial Office—he has known them all; and now in the Government of an undergraduate of “the House” he is Lord President of the Council and Secretary for India. The Right Rev. Dr. Mandell Creighton is one of the eminent Oxford historians who went on to historical study from the Greats School: Fellow of Merton, Canon of Worcester, Professor of Ecclesiastical History at Cambridge, and now Bishop of Peterborough, he has shown gifts as a preacher and administrator which have still left him time to continue his scholarly *History of the Popes*. In the new Lord of Appeal, whom we know better as Sir Horace Davey, we honour a distinguished son of University College, and a “Double-First,” who as Counsel to the University and a frequent visitor has always kept up his connexion with Oxford. Sir Edward Fry was an eminent Judge, and is an eminent man of science, whose researches in Botany won him a Fellowship in the Royal Society. Sprung from a famous family of the Society of Friends, he was a distinguished graduate of London University, and is respected by all who know him for his high character and admirable judgement. In Captain Mahan we welcome a distinguished officer of the United States navy, who may be said to have started a new branch of historical study by his two able books on *The Influence of Sea Power on History*; while M. Émile Boutmy, known to many of us by his constitutional studies, and particularly by his *Development of the English Constitution*, created the “École des Sciences Politiques” in Paris, which is doing such excellent work in the training of publicists. Mr. Arthur Palmer, Fellow of Trinity College, Dublin, and Public Orator, is known as a finished Latin scholar, whose edition of Horace’s *Satires* is in our hands. Mr. William Michell Ramsay, Professor of Latin at Aberdeen, the first Lincoln Professor of Archaeology and Art in Oxford, is the most patient and enterprising of explorers: the results of his work are to be found not only in *The Geography of Asia Minor*, in *The Church in the Roman Empire*, but in the strong stimulus he has given to skilled archaeological research in Oxford and elsewhere. Mr. John Henry Middleton, now Director of the South Kensington Museum and Slade Professor at Cambridge, is an old Exeter man, who is known in both Universities and far beyond as a scholar of extraordinary knowledge and fine taste. His *Ancient Rome* in 1889, since re-edited, marked an epoch in the study of Roman remains. An adventurous traveller in many lands, he can speak with knowledge on the art of all times and countries. Professor Mendeleef, the author of *Principles of Chemistry*, and other works, is known for researches which have sought to base a new grouping of the elements on the relations between their atomic weights. Mr. Francis Galton, F.R.S., is a grandson of Dr. Erasmus Darwin. Like his illustrious cousin, Charles Darwin, a Cambridge man, he made his *début* as a man of science by a book of travel, and has since done distinguished work both in meteorology and in the study of heredity. His *Hereditary Genius, its Laws and Consequences* (1869) has been followed by other writings and researches which place him in the front rank of men of science.

THE CREWEIAN ORATION.

THE speech opened with the usual tribute to the “pious memory” of Founders and Benefactors, to whom the University owes “the advantages enjoyed in this place for religious and useful learning.” A loyal and liberal use of these benefits was the only secure line of defence against those “seditiosi homines, non solum apud infimam plebem verum etiam in senatu, qui, novarum rerum avidi et volgi suffragia aucupantes, divitum bona publicare appetunt et tanquam in medium ferre.” Passing to the notice of those distinguished persons whose deaths had occurred within the year, the Orator called especial attention to the loss of the Professors of Latin and Greek within so short a time. As a former colleague of Professor Nettleship, the Orator was well able to appreciate his admirable scholarship and his high personal qualities: “ingenium viri candidum, iudicium sagax, raram assiduitatem, accuratam Latini sermonis notitiam ultro agnovit tota fere litteratorum respublica; neque erat cuius mens philologiae angustis defossa inhaerere possit; immo vero ita se subtilitatibus immiscebat ut clari aliquid inde semper expromeret.”

In attempting to depict the character of Professor Jowett, one might well hesitate whether to dwell on his remarkable activity in University business, his powerful influence on the system of Examinations, and the extension of Academic privileges to ever-widening circles of men, or on the controversies which formerly raged about the Professor’s freedom of thought, and his Socratic habit of submitting everything to the test of question. Indeed the Professor might well be described as a genuine disciple of that Socrates “who called Philosophy down from heaven to earth”; and this “popularizing” of Philosophy had been largely facilitated by those admirable translations which had made the study of Plato, Thucydides and Aristotle possible to any one who could read English. But the character of the *man* was something greater still: “tantam tamque fructuosam scribendi laudem nescio quo pacto praestrinxisse videtur ipsius viri consuetudo atque ingenium. Namque ut publicas virtutes, industriam, constantiam, sedulitatem propense admirantur ceteri, ita vitam interiorum ac veram indolem vel magis agnoscunt Balliolenses, qui unice experti sunt qualem se in Collegium suum gesserit, quippe illic patriam, illic domum, illic delicias illic quasi Sirmionem suum habere videbatur. Neque possum non recordari ipse, quamdiu Balliolensibus fui adscriptus, egenorum patronum, aegrotantium fautorem, discipulorum patrem simul et magistrum, nunc efficaci consilio, nunc praecisis sententiis, nunc lepido sermone, nunc terribili silentio iuniorum animos penitus excutientem, quo factum est ut omnes amabili quadam dominatione regeret ac moderaretur.” And not only had Balliol lost its Master, but its Visitor, Lord Bowen, “tempestivam modo maturitatem adsecutum et summis honoribus ac titulis nuperrime cumulatum.” A man of scholarship, genius, and keen wit, he seemed to be one “cui nihil fere aliud denegaverat Natura nisi longum vitae spatium.” After a fitting tribute to the late Vicar of St. Mary’s, to Professor Romanes, and the late Lord Chief Justice Coleridge, the Orator passed to a very lively survey of the present state of the University, commenting on the light and airy way with which it looked bankruptcy in the face, and engaged in new responsibilities with falling revenues. The condition of St. Mary’s Church was not forgotten—“descendunt statuæ restemque sequuntur,”—the Battle of the Pinnacles, the protests of Professor Case, the new School of English Language and Literature, of which he said “doctis puellis acceptiorem fore exspecto quam aerario nostro utiliorem.” The passion for athletics, and the “cult of athletes” by headmasters was then



touched upon—"tota natio in eo consentit ut caeca quadam veneratione athletarum genus adoret. Quamobrem sive adiutores sibi quaerunt archididascali scholarum, sive alumnos adsumunt Collegia nostra, non utique dixerim de moribus atque ingenio ultimam fieri quaestionem; illud tamen confitendum est nosmet ipsos, dum ceteras adulescentium virtutes admirari adfectamus, toros lacertosque petentium furtim contemplari et quae quisque ferat niceteria annuere." A development of this "manifesta phrenesis" was displayed by the young ladies who ride through the streets on bicycles, "pedibusque rotarum subiciunt lapsus." The spectacle thus presented was described in these words—"volatili ferro equitantes, passos crines, succinctas vel fluitantes vestes teretesque suras populo inhiante proponunt." Room was found for the description of a College bonfire, and a general "rag," followed by possible rustication. "Quodsi incendio fomes ac ligna defecerint, adstat temulentus puer 'pingue super oleum fundens'; alii autem, adgressi ferro cubiculorum postes, non dubitant tabulas, trabes, mensas ceteraque flammaram alimenta coacervare. Statim duplicantur clamores, anhelat ignis, rubet caelum. Mox adcurrunt excubiae nocturnae et vigilum cohortes, dispositis hamis et longo fistularum tractu instructae. Pulsant Collegii portas, opem invitis obtrudentes. Fit strepitus et utrinque convicia, his introitus postulantibus illis renuentibus. Crastina vero luce cum turbulentissimus quisque crapulam edormiverit, neque aliud stolidae laetitiae exstet monumentum praeter immundos cineres et fenestrarum ruinas, tum demum 'mentem lymphatam Mareotico redegit in veros timores' instans poenarum expectatio, cunctis tacite secum rogantibus 'O rus quando te adspiciam?' Nec diu in dubio res haeret: confestim fit iudicium et reorum relegatio; 'inde per amplum mittimur Elysium, et pauci laeta arva tenemus!'" The speech ended with a word of welcome to the Honorary D.C.L.s, and a special greeting to the Public Orator of the University of Dublin, who was entreated not to employ in his official addresses "Latinitatem elegantiore quam ut a virginibus puerisque intellexeretur."

LEO X.

ALL the writers, both of prose and poetry, who have hitherto treated of the actions of Leo the Tenth, have dwelt most on his character as a ruler and a patron of the arts. This, however, is unfair to the great pontiff, as entirely overlooking one aspect of his versatile genius. Moreover, the present age is one which demands novelty in literature; and though Mr. Taylor has sufficiently shown that originality and grace may be displayed in treating the subject on the old lines, yet even the writer of the *Newdigate* must not ignore *fin-de-siècle* tendencies. It is therefore to be regretted that no poet of modern times should have treated of the great Leo as a sportsman. This is a subject which lends itself, as will be seen, to poetical treatment of the highest order; and it is curious that it should have been overlooked by the writer of this year's *Newdigate*, whose erudite notes to his own work display wide knowledge and deep research. The poem might have begun somewhat as follows:—

Celestial Muse, your patience now I crave
While to your ear divine I type a stave¹;
In epic strains I sing the echoing sound
(You doubtless know the song) of horn and hound².

¹ Vide "The Meynell Hunt."

² Cf. Gnoli, *Le Cacce di Leon X.*, p. 4: "A suon di trombette e di corni, seguito . . . da falangi di cani."

"Quando sento sonar: tu tu, tu tu,
Passano cacciator sera e matin,
Gridan: Tè qui, Lion, tè qui, Cossin,
E molti can di lor bajan: bu, bu."—(Serafino Aquilano.)

Others shall ply the soft mellifluous line—
The meaning of these words I can't divine; }
The phrase is Mr. Taylor's, 'tisn't mine—
And speak at length of "Borgia's dying bed,"
Of "Marignano's and Ravenna's dead."
But I have lately read a book, you know,
Le Cacce, 'twas, di Leon Decimo,
Roma, La Camera dei Deputati;
And so I sing of Leo's hunting party
(The rhyme is slightly faulty, I'm afraid,
But still it is the best that could be made):
See, girt with all his chivalry, the Pope
Rides forth to kill the bounding antelope¹;
Around him all the youthful Sforzas ride,
Serapica², too, follows at his side.

A suitable conclusion might be formed by a prophecy of the pack of foxhounds, which at present, I believe, hunts in the neighbourhood of Rome. As Leo sleeps after a hard day's hunting, the shade of the great hunting cardinal, Ascanio Sforza, appears, and speaks as follows:—

The day shall come that sees a pack of hounds
Hunting once more near this great city's bounds.
The splendour of our hunt shall fade and sink
When Rome's nobility are clad in pink.
The glory of that day e'en now I feel!
Italia's shore shall boast a new John Peel—
&c., &c.

¹ Are there any antelopes in Italy? Never mind—

"One verse for sense and one for rhyme
I hold sufficient at a time."

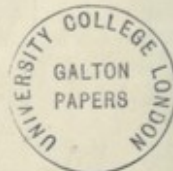
² "Il suo nome era Giovanni Lazzaro de Magistris, e il soprannome di Serapica (così si chiama volgarmente una specie di piccole zanzare) lo doveva alla piccolezza della persona."—Gnoli, p. 12.

R. L. G.

THE ENCAENIA.

THE Encaenia of 1894 were ushered in by gloomy forebodings: the weather, the late proceedings at Christ Church, and the impending election of a new Vice-Chancellor combined to develop an atmospheric condition only to be described as thunderous; and the phantom of sedition stalked in the precincts of the Clarendon Building. Such having undoubtedly been the case till noon on Wednesday, we can only congratulate ourselves on the quiet which prevailed during the ceremony, and the absence of red paint and broken windows which is still a gratifying characteristic of the Sheldonian Theatre. It is true that the most elaborate precautions were taken to baffle or exclude elements of danger and disorder: all Undergraduates were required to produce not only the customary ticket, but also a written certificate from their tutors to the effect that when last seen they were not carrying a pot of red paint; and members of the Bullingdon Club or other secret societies were carefully watched by persons detailed for the purpose.

That the proceedings in the Theatre were on the whole decorous may be admitted: that they were dull is the uncontrovertible fact—lamentable, but the fact; and if the jaded voluptuaries whose recreation is this University's reason of existence in the summer, and who make Commemoration a mere *délassement* from the fierce joys of a metropolitan season, are satisfied that they have had their money's worth in the way of undergraduate humour, it is only to be concluded that a long course of the New Humour and the New Drama must make a man—and especially



a woman—capable of being amused by anything. The fact is—and the sooner it is recognized by the Curators the better—that it is entirely premature to admit the public a whole hour before the commencement of the actual ceremony. Nay, the public is not only admitted, but expressly invited to enter; and even what Mr. Punch calls the “sparkling Oxonian” cannot be expected to go on effervescing for the benefit of his female relations for sixty whole minutes. When he has cheered for the ladies, groaned for the Proctors, and expostulated with the inevitable man in a red tie, there is really very little more to say: and all this might be done, with proper organization, in five minutes. On the present occasion, the hour before noon was occupied in the usual way. Inside the house, the galleries shouted, and Dr. Roberts performed popular tunes on the organ. Outside, the customary harrowing scenes were enacted: parties producing assortments of tickets of various colours and sizes were separated by ruthless officials; shrieking matrons were torn from the centre of their family circles and sent in by themselves, while Undergraduates muttered dark threats of climbing over the railings. But at 11.10 or so the rush was over; and, at one gate at least, two Pro-Proctors and five policemen had nothing to do for three quarters of an hour but to watch the *gaudia et discursus* of the Broad Street. The ceremonies within opened with the usual series of addresses by the Regius Professor of Civil Law. These, when the kind consideration of the galleries allowed them to be audible, appeared to be characterized by eloquence and attention to grammar; and the use of the Scotch dialect of Latin added a note of novelty. Of the new Doctors it is impossible to speak otherwise than with reverence and admiration: and as the spectators raised no protest at the time, it must be assumed that the bold combination of a D.C.L. gown and a green tie is to be regarded as pleasing and fashionable. Captain Mahan (be he an iambus, a trochee, or a monosyllable) bore off the honours of the applause. Meantime surprise was audibly expressed by persons ignorant of the procedure of Convocation and Congregation at the Vice-Chancellor and Proctors’ retention of their caps. This of itself shows that humour has exhausted its proper subjects.

The Public Orator was at his best: after a few interruptions, even those most intoxicated by the exuberance of their own inanity listened spellbound to his eloquent and truly Ciceronian panegyric of Professor Jowett and Professor Nettleship; and when the speaker turned “ad laetiora non invitatus,” the male part of the gallery was so much occupied in explaining the jokes to its female relations that bushels of pins might have been heard to drop.

The recital of Prize Compositions is not generally amusing: on the present occasion a touch of comedy was added by the Greek Verse prizeman, who entered thoroughly into the spirit of his iambics (comic, as appeared from the scansion), and apparently supposed that the cheers which greeted this unusual departure were due to the spectators’ intelligent appreciation of his meaning. The English Essay was remarkable for the assertion that “Novels are written by reasonable persons”—a paradox which even the Theatre could not receive without indignant protest.

The Honorary Degree of D.C.L. was conferred on the following:—

The Right Hon. the EARL OF KIMBERLEY, K.G., Her Majesty’s principal Secretary of State for Foreign Affairs.

The Right Rev. MANDELL CREIGHTON, D.D., Lord Bishop of Peterborough, formerly Fellow of Merton College,

and sometime Professor of Ecclesiastical History in the University of Cambridge.

The Right Hon. Sir HORACE DAVEY, M.A., Lord Justice of Appeal, formerly Fellow of University College, and sometime Counsel to the University.

The Right Hon. Sir EDWARD FRY, F.R.S., formerly one of the Lord Justices of Appeal.

Captain A. T. MAHAN, of the United States Navy.

M. ÉMILE BOUTMY, Membre de l’Institut de France, Directeur de l’École libre des Sciences Politiques.

ARTHUR PALMER, M.A., Professor of Latin, and Public Orator in the University of Dublin.

WILLIAM MICHELL RAMSAY, M.A., Professor of Humanity in the University of Aberdeen, formerly Fellow of Exeter College.

JOHN HENRY MIDDLETON, M.A., Exeter College, Fellow of King’s College, Cambridge, Director of the South Kensington Museum, Slade Professor of Fine Art in the University of Cambridge.

Professor D. MENDELEEF, of the University of St. Petersburg.

FRANCIS GALTON, Esq., F.R.S.

The Prize Compositions were recited in the following order:—

1. *English Essay*: “Comparison, Criticism, and Estimate of English Novelists from 1700 to 1850.” By PERCY F. ROWLAND, B.A., Hertford College.

2. *Gaisford Greek Verse*: Translation of Shakespeare’s *Henry IV*, Part II, Act ii. By GEORGE STUART ROBERTSON, Scholar of New College.

3. *Latin Verse*: “Capua.” By JOHN S. PHILLIMORE, Scholar of Christ Church.

4. *Stanhope Historical Essay*: “The Causes of the Fall of Richard II.” By FRANCIS URQUHART, Exhibitioner of Balliol College.

5. *Latin Essay*: “Quæritur de ingenio Alcibiadis.” By PERCY S. ALLEN, B.A., Corpus Christi College.

6. *Sir Roger Newdigate’s Prize*: “The Age of Leo X in Italy.” By FRANK TAYLOR, Scholar of Lincoln College.

JOURNAL OF A GREATS MAN.

Saturday, June 16. As the ordeal of the School is now safely over, not, I fancy, without credit to myself, and encouragement to the examiners, I purpose to enlarge the Kosmos of my experience by subjecting my Ego to the conditions of Commemoration. I shall then pass through a series of entirely novel sensations, and shall have the opportunity of observing, under circumstances hitherto inexperienced, the precise relation of stimulus to volition and *a priori* cognition to a *posteriori* femininity. I understand that one of the opposite sex who attracted once my youthful and as yet unversed-in-Greats attention, is coming up. I shall order some new dancing-shoes.

Tuesday, June 19. 12 noon. I went last night to the ball. My Ego did not in the least react to the stimulus. She (Dolly is her ridiculous name) found fault because my feet were not sufficiently under control during a polka. As if a philosopher cared about feet! I shall, however, show the *lusus plumæ* or *apospasma philosophicum et amatorium*

which I wrote on the back of my ball programme, and which is, I think, not without merit.

HAEC.

Come, Sir, 'tis time to lay aside that tome;
Call back to life your studious disposition.
The rooks are silent and the sheep are home;
Come, it is I who call you, Sir Logician.

ILLE.

Lady, forgive me, for it may not be—
Untiring, undisturbed by vain digression,
I trace the problem of philosophy,
Of mind, of matter, and of sense-impression.

If thou canst tell me—does the world exist,
And is our life a greater play's rehearsal,
Or are we shadows cast upon a mist,
The dim projections of an Universal?

1 p.m. Poem seems a little overstrained, must get my muse in a better state for reaction to the conditions of the ball of to-night. Shall go to the Flower-show.

6 p.m. Have been to the Flower-show. Met a botanist. Very depressing!

8 p.m. Had dinner in my own lodgings. Landlady very odd.

8.30 p.m. Find landlord has put melted butter on my pumps, which he considers to be as serviceable as varnish. They smell horribly.

9.30 p.m. Had a pipe and read some Schopenhauer. Considered philosophically she is most unattractive.

9.45 p.m. Went to bed.

Wednesday, June 20. 9 a.m. Went down.

CONGRESS OF UNIVERSITY EXTENSIONISTS.

WE have received a list of the eminent foreign gentlemen who are visiting Oxford before going to London to attend a congress of University Extensionists. By some mistake this list fell into the hands of our assistant poet, who attempted, with doubtful success, to versify it.

A number of strange gentlemen, whose names are quite unmentionable,

Have come to see if Oxford can be really called extensionable.

(I fear I can't continue to declaim so polyphoniously, So with the rhyming syllables I'll deal more parsimoniously.)

Sing, heavenly Muse, in fitting strains, the name of every delegate,

And do not to oblivion such a goodly gath'ring relegate;—
Commemorate the name of every Parthian, Mede, and Elamite,

Display a knowledge of the globe such as Pomponius Mela might:

Of Dr. Nordmann first relate, whose other name's Polonius—
At least it ought to be, but here my Muse I fear's erroneous¹;

Then of Professor Butler next, by way of a diversity,
From the north-east division of Chicago University—

¹ I thought he came from Elsinore, but I see, on looking again, that it is Helsingfors.

Although a University which could be thus divisible
Is calculated to upset a person who is risible.
Likewise great Harald Hjarne from the 'Varsity Upsalian,
And Mandello, who sounds like (though he isn't) an Italian—
He's really a Hungarian, a Buda-Pestilential;
And Westermarck (on marriage his opinion's influential);
Of Ross and Marshall and Dupuis from Kingston, Dom.
of Canada

(Unfortunately for my rhyme there's no one come from
Granada);

Of Dr. Duncan of Madras, who lives in Aberdeenshire,
though—

And here, I fear, I've made a line which hasn't any rhyme
to it;

And so I think I'd better close my poem instantaneously,
And class the other gentlemen in one lot miscellaneously.

R. L. G.

"— THAT IS THE QUESTION!"

AND Bee, my love, is coming too!

How nice it sounds to call her "Bee"!

But that, of course, I only do

In confidence, my pen, to you—

I wonder how she thinks of me?

As "Stephen," or as "Mr. T."?

Her parents as my own I view,

Her brother I'd call "Jack," with glee,—

And Bee?—"My love!"

But shall I dare to? Well, we'll see,

(I'm sure the train is over-due!)

What shall I say, and what will she?

Will she with favour hear my plea,

Smile on her slave who fain would woo,

And be my love?

S. T.

THE SPECTRE AT THE FEAST.

AND when I had finished my dinner and had drunk my regulation two glasses of port, I strolled back across the grass to my room, heedless of the busy scouts hurrying this way and that, of the gardeners arranging the flowers, and the others kindling the fairy lights and Chinese lanterns. Somehow, it was with a heavy heart I reached my room, the table littered with papers, and the books lying here and there haphazard. Though it was a June night the room looked dull and cold and uninviting. I opened my Plato at random, but the Greek words blurred, and the dialogue was unmeaning, and with impatient fingers I lighted my pipe. As the smoke curled lazily in the unmoved summer air my thoughts went unconsciously back to a night like this twenty—was it twenty-five?—years ago. Then I too had had the hopes and ambitions that move the young: I too had been caught by the charm of a smile and the tempting sweep of a ball-dress, had fluttered ceaselessly, like a bat (for Heaven knows I was short-sighted even then), round some bright light: but, just when I thought I had found an ideal—not indeed Plato's laid up in the heavens, but living, moving, breathing upon earth—she had vanished from me with a dainty toss of the head, a careless word, and a light laugh. Ah, how draggingly the years had crept on since! Time was when perchance once and anon some sparks of enthusiasm had been kindled in me by the divine charm of Plato, but oftener I had gone the dead beaten round of $\mu\eta$ and $\alpha\epsilon$, had found

my gospel in the *Classical Review* and my literature in the *Journal of Philology*, though, unlike Browning's grammarian, I had not solved the mystery of the enclitic *de*.

Then, somehow, the air of the room grew close and stifling, and I got me up and half stumbled out into the cool air, dazzled by the twinkling maze of lights, while on my dullest fell the rhythmical bars of a popular valse. Here and there a couple passed me, and he seemed to murmur something with a half-contemptuous laugh as I passed in my dingy black coat and antiquated pipe; and she, perchance (for some women have hearts, have they not?) half turned and watched me with that soft look of sympathy which can make cowards of us all. But on I pressed, though I knew my feet were taking me, willing unwilling, to a spot I had shunned these twenty years or more—a quiet corner where the intertwining conscious trees invited confidence, and the narrow mildewed seat heard many tales and repeated none.

How long I sat there I know not. Again and again mechanically I filled my pipe, and the wreathing smoke kept my fancy busy with thoughts and dreams of the past (for the future has no charm); and then suddenly across the grass that led to my quiet haunt came two figures: she, lithe and graceful, with a light shawl just hiding the wandering outlines of her hair, and a face such as had often haunted my dreams. He was leading her to the spot I thought sacred to my misery. Unable to move or rise, my voice stuck in the utterance: but before they reached me, he turned and faced her almost boldly, and asked her something I heard not, and she, with a light laugh that even then opened old scars in my heart,—“You? How absurd!” she cried, “I never dreamed of you like that: I thought you only cared for Plato and that sort of thing”—and with a half-pitying shrug she turned quickly and left him. And I, full of pity for the young man, started up to bid him take heart and be a man, and face life like one; but when I had fain taken his hand I stood aghast, for the youth was the self of twenty-five years gone—and the chill breeze of morning pierced through the leaves, and I shivered at it, and my pipe died out. C. E. B.

AN OXFORD “AT HOME.”

I HAD never the wildest conjecture
That some day we really might meet;
Though I often had seen her at lecture,
And we often had passed in the street.
But here she sat looking so lonely,
So bored by the chatter and hum,
A smile, and a bow, and then only—
“Well, yes, I *am* glad to have come.”

Ennui—we forgot its existence,
Undisturbed in our happy retreat;
The music improved with the distance,
And the 'cello grew charmingly sweet.
For away from the crush and the bustle
We sat in a cosy recess,
We left it to others to hustle
And gush commonplace to excess.

And she thought I was like cousin Ronald,
Did I mind?—and then—oh! *did* I know
A man, she believed he was Donald,
Played golf, Scotch, good-looking?—and so
I led her to tell of her doings—
Did life at the 'Varsity pall?
Were there suings, downsendings, and ruings?
Or were *all* good at Somerville Hall?

With the naivest of possible glances
She thought bonfires were “horrible fun”;
Though perhaps too the recent advances
At Brasenose were just overdone.
Yet she told me how once at her “college”
They'd dozens of stone ginger-beer,
“And some went to bed, I acknowledge,
Feeling very decidedly queer.”

She wished they'd a boat on the river,
She was sure they could muster a crew;
And I could not refrain from a shiver
When she asked me if I was a blue.
Then I (curiosity simply)—
“Have you found a quite nice chaperon?”
But the dimples grew rather more dimply,
For she said, “I go sometimes alone.”

Time flew which beforehand was crawling,
And a deep irrepressible sigh
Rose, when 'mid all the crushing and mauling
She bade our good hostess good-bye.
And I, who enjoy rustication,
May not meet her at lecture, nor call,
Nor e'en for her gratification,
May serenade Somerville Hall. E. G. H.

A GRAND REMONSTRANCE

TO THE EXAMINERS OF THE UNIVERSITY.

WE hear that in some of the Schools quite an unusual number of men are to be ploughed, and we feel therefore driven to remonstrate in the name of humanity with those who are in authority in the University. We would have them consider, first, the youth and innocence of the victims; secondly, the grievous nature of the punishment to be inflicted; thirdly, the harrowing circumstances under which these unfortunates are to be thus treated.

And first, the youth and innocence of the victims. The very customary dress of the University on this occasion bears witness to the blameless character of the youth who is to be barbarously ill-treated. He is arrayed in black and white—black as the symbol of the austerity and tranquillity of his life—black, because he at least has never known the orgiastic bump-supper, the tumultuous smoking-concert, the demoralizing stage-play; and white because he is blameless and innocent—innocent, if you will, of learning, but also untainted by worldly philosophy and wisdom, his mind still white and blank as first it was while he yet was a babe. But what do we say? he is still a babe, ignorant of the great world, untouched by the ambition and avarice of maturer years. It is not his yet to know the avaricious greed which urges on the anti-gambler to his hatred of loo and nap; it is not his yet to consider whether he has the money with which to pay for the things which the crafty tradesman sells him. He is still unskilled in the ways and wickedness and guile of the world. He has never done anything worse than cut his lectures, leave his books unread, and occasionally—very occasionally—play at billiards. Let us address our ancient University, and entreat her to spare the youngest, the most childlike—we should even say childish—of her offspring.

And, second, we should wish to ask our venerable mother, as represented by our excellent and amiable examiners, to consider what it is they do. To plough, to pluck, to spin—these are the phrases by which we veil and yet describe the tortures which they are about to inflict. A little consideration

of all that is implied in the words will surely lead our skilful and, in one sense, most merciful of executioners to pause. To plough, to drive the ploughshare of defeat through the flesh and bone of the unhappy candidate, to tear up the hitherto virgin soil of his mind, to tear it up, to dig great furrows in it, in search of that which is not to be found there, of knowledge and intelligence (most poisonous and noxious of weeds)—what can be more cruel, more barbarous? Consider, O ye Examiners, that you too were once young, that you too, who now wallow in the wealth of your accumulated knowledge, that you were once as they. Recall to yourselves the days—the happy days—when you were young and ignorant, when you were yet untainted by contact with an evil world, when you were blameless and innocent, when you also were ignoramuses.

But if it is cruel to plough, what must it be to pluck—to tear off that decent plumage of words and phrases which protects our tender ignorance, to drag forth to the light of day that mind which we in our modesty would fain hide? We do not wish to proclaim our scientific or philosophic or historic attainments; rather would we treasure them up in the most sacred shrine of our hearts, rather would we seek to hide these talents, these attainments, with which nature has gifted us. We have never wanted to make them greater; we have never been guilty of striving to increase them; we know well the dangers of the high-souled philosopher, and we would shun them.

And finally, think what it means to spin, to be spun. It may indeed at first sight not be so evident from what it is that this phrase derives its being. But there can be little doubt of it. The Examiner is clearly the spider, the student the fly which is invited "to walk into his parlour," to quote the words of the poet. The student enters the fatal place, those caverns remote and inaccessible and unknown to him, and the spider comes forth to weave around him the web of ingenious theories, of subtly devised facts, until the hapless one loses head and heart and hope; and so that he may but escape, will confess to any error, to any ignorance.

Again, then, O Examiners, consider, we beseech you, not only the innocent and blameless lives of your victims, but also the cruelty (unintentional we doubt not) of that which you purpose to do to them. Bethink you of your humanity, consider you too are flesh and blood, and have mercy.

And if it should be so that these things will not move you, then at least consider the moment, consider the circumstances under which you do these things. If the salvation of the state require victims, let them be offered, but at a more fitting time. For consider in whose presence it is that you offer the holocaust, that this sacrificial rite proceeds. Consider the "sisters and cousins and aunts" (that we may again use the poetic words) before whom you immolate, in whose presence you slay. Remember that the groans and tears of your victims pierce the ears and hearts of the most amiable and tender of spectators. If your rites must needs take place, then seek out some more sequestered spot, some more seemly occasion.

For the last time, ye Examiners, we entreat you, be merciful, be tender-hearted, be human. It will perhaps cause you to feel less warmly the glow of triumph, the pride of victory, if you spare the vanquished; but consider that the triumphal car of your glorious procession will be graced no less by crowds of thankful slaves, than by the corpses of innocent victims.



LOVE IN THE SCHOOLROOM.

EHEU! *Musa* with genitive *Musae*,
I am in an indicative mood,
I will tell all the world about Susy
That so far to my grief I have wooed.

I will publish it forth in good Attic
That my girl is the pride of her sex,
And will solve with a soul mathematic
The equation where Susy is x .

May a cube be of twenty dimensions
If I give up my suit in despair;
May an adverb have moods and declensions
If I doubt that she's true as she's fair!

She has cut an immense conic section
Of elliptical form in my heart:
Eheu! what is the Greek for "affection,"
And the Latin for "love" and for "dart"?

Come, Smith minor, I'll hear your *διδωμι*,
The imperative mood is *δίδου*;
'Tis an omen: sweet Susy, bestow me
The reward of my faith, it is thou.

But her heart's like the seed of a lupine,
It is hard, so the botanists say;
And her ears were both passive and supine
To the Sapphics I sent her to-day.

Though I tell her the height of Mount Cenis,
And the thickness of Hadrian's wall,
Nought she cares, but is off to lawn-tennis
With a man who knows nothing at all.

For my rival, that prince of barbarians,
Let her love such a cub if she can;
He has not even heard of the Aryans,
He's unsound in the uses of *ἀν*.

Ah! I feel what the Emperor Nero
Must have felt about something A. D.,
But my dates, they are blank, they are zero,
When my Susy won't listen to me.

I am teaching that *καί* is enclitic,
My philology seems to have gone,
I have just said the Scotch are Semitic—
And all this from a Boniface don! J. W.

THE VENDETTA.

A STORY OF MODERN OXFORD.

"How very interesting!" said the Distinguished Foreigner:
"what a number of curious old survivals continue in Oxford!
Do you mean to say that Undergraduates are actually pursued through the streets by the Proctors and their attendants?"

"Yes," replied the Communicative Undergraduate, "and

when they are overtaken they are fined a shilling if they have run one mile, and sixpence more for every successive mile."

"Dear me!" said the Distinguished Foreigner, "how very curious! But there is another point about which I should like to ask you. How do you settle quarrels which arise among you, since the practice of duelling does not exist? There is Rugby football, I know; but what do those do who do not happen to play that game?"

"Well," replied the Communicative Undergraduate, "There is no way in that case, and a good deal of bad blood is bred in consequence. There was one such quarrel of which I knew, which had a most tragic issue."

"Sir," said the Distinguished Foreigner, "would it be asking too much of you—of course, I do not wish to revive painful reminiscences, but—"

"I shall be very glad," exclaimed the Communicative Undergraduate, "to relate the story. It will give you a picture of Undergraduate life as it really is. Nor does it pain me very much, for the events took place some time ago."

"At the beginning of the Summer Term of my first year, when I returned to Oxford, I found that a Freshman had come up and taken rooms at the foot of my staircase. He was a good deal older than most of us, and kept himself very much apart from the rest of the College. Beyond the fact that his name was Sandford, I do not think that any one ever found out very much about him. After some days, however, we found that he had fitted up a small chemical laboratory in his rooms, where he used to conduct experiments. This would have been a harmless amusement, had it not been for the fact that singularly noxious smells used to come up the stairs, much to the annoyance of myself and my friend Williams, whose rooms were opposite to mine. We endured this nuisance as long as we could, but at last we determined to put a stop to it. One night we entered Sandford's rooms, took him out of bed, and immersed him in a bath in the Quad. It was very wrong of us, I know, but we were much annoyed with the man. He made no resistance, but when we let him go, he turned to Williams and said,—

"I shall not forget this!"

"I hope not," replied Williams; "or we shall have to do it again."

"We did not think very much more of the occurrence, but were relieved to find that the chemical experiments seemed to have ceased. A few days later, a number of men were assembled in my rooms after Hall. I handed round a box of cigars. When I offered them to Williams he refused them."

"Will you take a pipe?" I inquired.

"No, thanks," said he; "I think I'll have a cigarette."

"He looked rather guilty as he said this, and we all gazed at him in astonishment, for a favourite topic of conversation with him had been the intellectual, moral, and physical degradation of those who smoked cigarettes. We therefore were seriously alarmed; but none of us ventured to say anything at the time, concluding that he had good reasons for his conduct. Later on in the evening another shock was administered to us. I offered the company whisky and soda, which Williams refused, saying that he should like claret and lemonade. Now Williams' usual drink was neat whisky; if he condescended to take soda, he mixed it, to use his own phrase, 'half and half with a leaning to mercy.' His conduct on this occasion threw such a gloom over the party that it soon broke up, and Williams himself went to bed, saying that the claret had made him sleepy."

"After breakfast next morning I lighted a pipe, but Williams with a furtive look again took a cigarette. I said nothing, and affected not to notice the melancholy occurrence. Hardly, however, had he taken three whiffs, when he threw the cigarette away with an oath."

"What's the matter?" I asked.

"The beastly thing's making me feel bad," he replied, and buried his face in his hands."

"Soon afterwards he went out, saying that he was going to see a doctor; but I could see by his manner that he was going out for some other purpose. I learnt afterwards what this purpose was. He went to a confectioner's shop and drank a glass of lemonade. While he was doing so, the Head of the College entered the shop for the purpose of purchasing some sweets for two little nieces whom he was taking for a walk. He gazed sternly at Williams, who blushed, dropped his glass, and fled from the shop. He wandered about the town for some time, and when he returned to his rooms he found a summons from the Head awaiting him."

"Mr. Williams," said the Head, "may I ask what you were doing in Coffin's shop just now?"

"I—I was drinking some lemonade," stammered Williams."

"So I perceived," replied the Head, sternly; "but may I remind you that on previous occasions when I have had to reprove you, it has not been for excessive fondness for lemonade? You cannot but be aware that you are forbidden by the Statute to enter a confectioner's shop. You come to Oxford ostensibly to read, not to waste your mornings lounging in shops. I do not know with what purpose you were there—for I cannot accept the lemonade as anything but an empty excuse—but you had no business there at all. Do not let me have occasion to refer to this again. Good morning."

"Williams returned to his rooms, sported his oak, and refused to see any one for the rest of the day. On returning from Hall, I found his door open. I entered. Williams was gone. On the table was a note addressed to me. I opened it. It ran as follows:—

"I can't stand this any longer. I seem to be turning into a teetotaller—or a bimetallist or something. I am going to America. Good-bye, old chap."

"R. J. W."

"Just as I had finished reading this, Sandford entered the room."

"He's gone, has he?" he remarked, looking round. "I'm sorry for that. I should have liked to see further developments."

"What do you mean?" I asked, angrily."

"The affliction from which Williams has been suffering," replied he, "was due to a drug discovered by myself. He was the leader of that attack on me, so I determined to be revenged. I used to come up here every morning and put a small dose in his breakfast before he was up. If he had stayed a few days longer I should have destroyed his taste for meat and soap. But even as it is, I think we are about even."

"And he left the room with a sardonic laugh. He went down at the end of that Term, and I have never seen him since. Williams is at present, I believe, a very successful temperance lecturer in the United States of America."

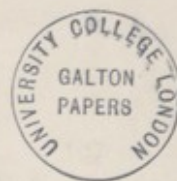
"What a strange and affecting story!" said the Distinguished Foreigner. "I am vastly obliged to you, Sir!"

R. L. G.



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CALENDAR

| | |
|-------------------|--|
| Tuesday, May 21. | Easter Term divides. |
| Thursday, May 23. | Ascension Day. Scarlet Day. Select Preacher, at 2.15 p.m., The Right Reverend The Lord Bishop of Derry, D.D., New College, Oxford. Discussion of three Reports at 3 p.m., see p. 782. (1. Entertainments. 2. Marshal and Clerk. 3. Advanced Study and Research.) Library closed. |
| Sunday, May 26. | Sunday after Ascension Day. Select Preacher, at 2.15 p.m., The Right Reverend the Lord Bishop of Derry, D.D., New College, Oxford. |

Congregations during the present Term

| | | | |
|---------------|------|---------------|---|
| Thursday, May | 30, | at 12.30 P.M. | |
| " | June | 6, | 2 P.M. |
| Wednesday, " | 12, | noon. | (Recitation of Prize Exercises. Not for degrees.) |
| Thursday, " | 13, | 2 P.M. | |
| Saturday, " | 15, | 9.30 A.M. | (Presentation of Supplicats.) |
| " | 15, | 11 A.M. | (General Admission.) |
| Tuesday, " | 18, | 9.30 A.M. | (Presentation of Supplicats.) |
| " | 18, | 11 A.M. | } (General Admission.) |
| " | 18, | 2 P.M. | |

f.8v

Election to vacant Living

KING'S COLLEGE LODGE. 20 May 1895.

Notice is hereby given that the day appointed for the Election of a Clerk to be presented to the Vicarage of Acton Round, in the diocese of Hereford, is Saturday June 8.

The election will be made in the Senate House by the Members of the Senate voting more burgensium as heretofore.

The hour of polling will be 1.30—2.30 p.m.

A. AUSTEN LEIGH, *Vice-Chancellor*.

Governor of St Olave's School appointed

KING'S COLLEGE LODGE. 28 May 1895.

MR W. H. GUNSTON, M.A., St John's College, has been reappointed a Governor of St Olave's School, Southwark, for five years from May 19, 1895.

A. AUSTEN LEIGH, *Vice-Chancellor*.

University Lecturer appointed

KING'S COLLEGE LODGE. 20 May 1895.

The General Board of Studies have appointed H. F. BAKER, M.A., of St John's College, University Lecturer in Mathematics in connexion with the Special Board for Mathematics for five years from Midsummer 1895, and the appointment has been confirmed by the Special Board for Mathematics.

A. AUSTEN LEIGH, *Vice-Chancellor*.

The following degrees were conferred:

Doctor in Science (honoris causa)

[Stat. A, Chap. II. Sect. 18, Par. 3]

Francis Galton

Trin.

Doctor designate in Medicine

Alfred Waugh Metcalfe

Trin.

Inceptors in Arts

Reginald Thomason Gould
Ernest Frederic Halsted
Algernon Augustus Markham
Francis Robert Pryor
Herbert Laurence Taylor
Alexander Maxwell Tod
Charles Edward Dodd
Alexander John Sainsbury

Trin.
Trin.
Trin.
Trin.
Trin.
Trin.
Joh.
Joh.

John Chambré Miller
George Bertie Innes Hopkins
Edward Jermyn Mathew
Herbert Fitzackerley Freeman
Charles Arthur Beales
Edward Dowe
Reginald Philip Goldney
Walter William Crump

Cla.
Gonv. & Cai.
Trin. H.
Corp.
Christ's.
Christ's.
Christ's.
H. Ayerst.

Bachelors designate in Medicine and Surgery

Arthur Burton
John Edwin Bates
Alfred Eichholz
Edmund Whichello

King's.
Queens'.
Emm.
Sid. Suss.

JOHN WILLIS CLARK,
Registrary.

f.9v

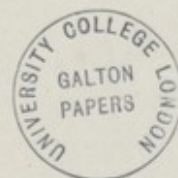
The following is the Speech delivered by the Public Orator in presenting Mr Francis Galton, M.A., F.R.S., of Trinity College, for the honorary degree of Doctor in Science.

Sedes olim sibi notas hodie revisit alumnus noster, qui flumine Nilo quondam explorato, et Africa Australi postea perlustrata, velut alter Mercurius omnium qui inter loca deserta et inhospita peregrinantur adiutor et patronus egregius exstitit. Idem, velut alter Aeolus, etiam ipsos ventos caelique tempestates suae provinciae audacter adiunxit. Hodie vero Academiae nemora nuper procellis nimium vexata non sine misericordia contemplatus, e frondibus nostris caducis capiti tam venerabili coronam diu debitam imponi patitur. Tempus certe in scientia iamdudum versatus, ventorum cursus tabulis fidelibus olim mandavit, gentesque varium caeli morem praediscere docuit, laudem philosopho cuidam antiquo a Nubium choro Aristophanico quondam tributam uno saltem verbo mutato meritis:—*ὃν γὰρ ἂν ἅλλῳ γ' ὑπακούσῃμεν τῶν νῦν μετεωρολογούντων*. Longum est avorum et proavorum ingenia magna in ipsorum progenie continuata ab hoc viro, Caroli Darwinii cognato, virorum insignium exemplis illustrata percensere. Longum est tot honores titulosque ab ipso per tot annos cumulos commemorare. Hoc autem in loco, eloquentiae eius undecim abhinc annos conscio, instituti anthropologici praesidem non corporis tantum sed etiam mentis humanae mensorem appellaverim. Inter antiquos quidem celebratum erat illud Protagorae, omnium rerum mensuram esse hominem. Inter recentiores autem notum est hunc praesertim virum hominum omnium, imprimis pessimorum, mensuram ad amissim velle exigere. Ceterum plura hodie dicere supervacaneum est; constat enim ne optimorum quidem virorum a laudibus abesse debere mensuram.

Duco ad vos virum de scientia anthropologica et meteorologica praeclare meritum, caeli et terrae indagatorem indefessum, studiorum denique geographicorum etiam inter nosmet ipsos fautorem insignem, FRANCISCUM GALTON.

(End of the official part of the Reporter)

COLLEGES, SOCIETIES, &c.



St John's College

At St John's College, an Examination will be held on June 7 for election to four Choral Studentships of the value of £40 *per annum*, tenable in the ordinary course for three years. Two of the Studentships will be awarded to *Tenor* and two to *Bass* voices. Further information may be obtained from any of the Tutors, to whom the names of Candidates must be sent on or before June 1.

20 May 1895.

f.10r

Cambridge Philological Society

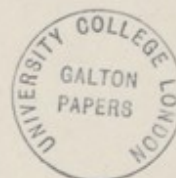
FOR the Meeting to be held in Dr SANDYS' house, Merton House, Queens' Road, on Thursday next, May 23, 1895, at 4.45 P.M., the following Contributions have been promised:

I. By Professor RIDGEWAY:

What led Pythagoras to the doctrine that the world was built of numbers?

II. By Mr L. HORTON-SMITH:

The Oscan word ANΑΣAKET.



Liverpool College

THE Council are about to elect a PRINCIPAL to supply the vacancy which has been caused by the resignation of the Rev. Frank Dyson, M.A. He must be a clergyman of the Church of England in priest's orders, and M.A. at least of the University of Oxford, Cambridge or of Trinity College, Dublin. His remuneration will commence at £800 per annum, with permission to take boarders, but only pupils attending the College. His duties will begin in September. Testimonials to be sent on or before the 1st June, addressed to the Secretary, to whom application may be made for further information.

GEORGE H. DAYSON,
Secretary.

SHAW STREET, LIVERPOOL.
8th May 1895.

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mine under normal conditions; they were taken in a sealed-off portion of Seaham Colliery after an explosion and an underground fire, and thus represent what took place under an entirely abnormal condition of the mine. Apart from this point, the Author of the Warnings contrives to give his reader the impression that Mr. Corbett's Seaham Colliery records entirely favour his own views, that high barometric pressure causes an increase in fire-damp in mines; so far from this being the case, however, Mr. Corbett's own words (*Trans. North Eng. Inst. Min. Eng.*, vol. xxxii., 1882-3, p. 310) are:—"It is well known that gas is frequently found in colliery workings before any fall of the barometer commences. . . . The barometer, so far as an indication showing that gas may be expected, cannot be said to be reliable." In the discussion of this paper, Mr. J. Daglish (*ibid.*, p. 311) said that he had made experiments at Hetton Colliery, and that "the results he arrived at were precisely such as were given by Mr. Corbett, namely, that there was no connection whatever between the variations of the barometer and the prevalence of gas in the galleries of the mine." The chief witness cited in his favour by the Author of the Warnings is thus seen to give evidence quite directly against him when he is quoted correctly. Further, if the Author of the Warnings attaches the importance that he appears to do to these records of pressure, why does he not quote the very well known and much more applicable experiments of Sir Lindsay Wood, who determined the pressure of firedamp in normal coal seams by boring holes into them and inserting pressure gauges? His general conclusions (*Trans. North Eng. Inst. Min. Eng.*, vol. xxx., 1880-1, p. 224) are:—"There is no connection between the variations of the barometrical column and the temperature with the quantities of gas evolved"; only in one set of tests, namely, at Eppleton Colliery, was any connection traceable, and, respecting these, Sir Lindsay Wood (*ibid.*, p. 182) states:—"With the barometer steadily rising, the gas pressure (with one or two exceptions, when there was an increase) steadily decreased."

Personally, I attach relatively little importance to records of pressure alone, even to such careful ones as those of Sir Lindsay Wood, Nasse, Broockmann, &c.; in the absence of analyses, it is only a conjecture that the pressure was caused by firedamp, and in the case of Seaham Colliery it is quite likely that other gases were present in large quantity. I hold that there is only one correct method of attacking this question, as has already been pointed out by Oberberggrat G. Köhler, and that is by systematic chemical analyses of the return mine air combined with barometric observations, as has been done on several occasions on the Continent, e.g. by Hilt at the Gemeinschaft and Alt-Gourley pits at Aachen, and, above all, by W. Köhler at the Grand Duke Frederick pits at Karwin. All the observations corroborated each other, and agree with the summary of W. Köhler:—"The proportion of firedamp in the air of the mine decreases in general with rising atmospheric pressure, and increases with falling atmospheric pressure. The proportion of firedamp increases the more rapidly the more steeply the curve of atmospheric pressure descends, and decreases the faster the more steeply the curve of atmospheric pressure rises." Harze in Belgium and Behrens in Westphalia have confirmed these conclusions in their elaborate works on the subject. All this is the result of accurately observed facts, into none of which "theory" enters. All workers and observers in this subject have come to one of two conclusions, either that barometric variations have no decisive influence on the evolution of gas, or else that a falling barometric gradient increases the outflow of gas. Not a single writer, so far as I know, shows that a rising barometer increases the evolution of firedamp. Whilst most English authorities hold the first view, the universally held opinion in Germany is summed up thus by the well-known Saxon authority, E. Treptow:—"Im besonderen ist es als erwiesen anzusehen, dass nach einem schnellen Fallen des Barometers stärkere Gasentwickelungen stattfinden. Es ist daher die fortlaufende Beobachtung der Barometerstände von grosser Wichtigkeit; tritt ein Barometersturz ein, so ist besondere Vorsicht geboten. Ein Barometerfall von 1 mm. in einer Stunde ist schon sehr

bedeutend." (In particular, it may be looked upon as demonstrated that, after a rapid fall of the barometer, stronger evolutions of gas take place. The continual observation of the height of the barometer is therefore of great importance; if a drop of the barometer takes place, special caution must be observed. A fall of the barometer of 1 mm. per hour is already very serious.)

It is facts like the above-quoted analyses that alone can decide this question; it is quite useless to inquire whether the barometer was high or low at the time of any particular colliery explosion, because a serious colliery explosion can only be brought about by the fortuitous coincidence of a number of contributory conditions, only one of which (and in all probability a relatively unimportant one) can be ascribed to the state of the barometer. The Author of the Warnings implies that my views have been influenced by newspaper statements as to the height of the barometer at the time of the great Courrières disaster; but not only do I, as I have said, regard such evidence as useless, but, above all, I would not commit the crowning absurdity of quoting in a discussion on fire-damp the Courrières explosion, which is perfectly well known to have been a coal-dust explosion in a non-fiery pit.

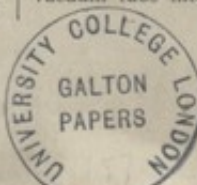
Perhaps the most interesting point in the letter of the Author of the Warnings is his explanation of the reason why high barometric pressure must increase the percentage of gas in a pit; he believes that the increased pressure of the air squeezes down the earth's crust, and squeezes the gas out of it. I presume that he wishes this explanation to be taken seriously; but surely he has overlooked the very obvious fact that any increase of pressure on the surface of the earth, tending to squeeze gas out, is counterbalanced by an exactly equal increase of pressure upon the face of the coal in the mine, tending to keep the gas in, and that no variation of atmospheric pressure can thus disturb the previously existing régime. Even if this were not so, and if the crust of the earth could respond to such pressures, they are too insignificant to have any practical effect. An enormous fluctuation of barometric pressure, such as a rise of 1 inch, would correspond to a pressure on the earth's crust of only 70 lb. per square foot, or a good deal less than that of an ordinary crowd of people standing on the ground; the very suggestion that such a trifling weight can have any effect through thousands, or even hundreds, of feet of strata is so absurd as to require no refutation, and least of all to the mining engineer who has had to timber underground workings, and who knows that the roof pressure in a mine must be gauged, not in pounds, but in tons on the square foot, and that 70 lb. more or less will make no practical difference whatever. That such a theory should be relied on in defence of the Colliery Warnings surely justifies their opposition by mining engineers, and forms an emphatic endorsement of the verdict of the last Royal Commission—which, by the way, was not composed of professors of mining or theorists—upon these Warnings as *misleading and serving no useful purpose.* H. LOUIS.

The Afterglow of Electric Discharge in Nitrogen.

IN a paper published in the current number of the Physical Society's Proceedings, I showed that the yellow afterglow produced by the electric discharge in rarefied air is due to the oxidation of nitric oxide by ozone, both substances being formed in the discharge. In a second paper, in course of publication, it is shown that several other oxidisable gases or vapours inflame spontaneously when mixed with ozone at a low pressure, and burn with phosphorescent flames of low temperature.

An afterglow in nitrogen has been recorded by Mr. Perceval Lewis (*Phys. Zeit.*, v., p. 546, 1904) which is obtained only with condenser discharges. This glow is orange in colour, and possesses a visual spectrum of three bright bands in the green, yellow, and red regions, in contrast to the continuous spectrum of the glow which I have traced to nitric oxide and ozone.

I have recently experimented with Lewis's nitrogen glow, using the method, introduced by Dewar in 1888, of drawing a continuous current of the gas through the vacuum tube into another vessel on its way to the pump.



I succeeded at once in obtaining it, when the condensed discharge was used. This glow has many interesting properties, of which a preliminary publication seems desirable.

I believe it to be due to pure nitrogen. Lewis states that it cannot be obtained from atmospheric nitrogen, but this does not agree with my experience. I have used atmospheric nitrogen exclusively.

The glowing nitrogen is unaffected by silver gauze, which quenches the ozone glows. It is destroyed by mixing oxygen with it, but merely diluted by hydrogen or ordinary nitrogen. When acetylene is led in, a bright flame is produced at the point of confluence. This flame replaces the original glow. It has a spectrum consisting of the swan and cyanogen bands, along with others not identified. If the nitrogen glow is led over iodine a magnificent blue flame is produced, contrasting sharply with the original orange glow. With sulphur the original orange glow is quenched, but no other replaces it. The sulphur becomes hot, and a metallic-looking sublimate is formed along the tube.

The most remarkable phenomena, however, are with metallic vapours, which give line spectra when the glowing nitrogen is led over them. Sodium, potassium, thallium, mercury, zinc, cadmium, and magnesium have all yielded line spectra in this way.

Investigation is being pushed on as fast as possible, but the facts so far obtained seem to point to the production of a chemically active modification of nitrogen. It is suggested, provisionally, that the spectra are developed by the chemical union of this active nitrogen with the various metals and with iodine and acetylene. The orange glow obtained with nitrogen only would, on this view, be due to the transformation of the hypothetical active nitrogen into ordinary nitrogen.

R. J. STRUTT.

Imperial College of Science and Technology,
January 30.

Singularities of Curves.

I HAVE not, at present, access to the books referred to by "T. J. I'A. B." in his letter of January 12; but he is altogether wrong in thinking that the singularity he mentions cannot be investigated by the methods explained in my "Geometry of Surfaces." An arbitrary line through the origin has sextactic contact thereat; but since the axis of x has 12-tactic contact at the origin, the latter cannot be an ordinary sextuple point, because no line through such a point can have a higher contact than septactic. The singularity is either a singular point of the sixth order or one of lower order with coincident branches passing through it, and it illustrates the necessity of drawing a distinction between ordinary multiple points and singular points. The trilinear equation of the curve can be obtained by eliminating t between $\beta = at^6$, $\alpha\gamma - \beta^2 = \beta^2(t^3 + t^4)$. The factor $\alpha\gamma - \beta^2$ suggests the existence of tacnodal or other branches of a similar character, and that the singularity might be transformed into a simpler one lying on a curve of lower degree than the sixteenth by using Cremona's transformation,

$$\frac{\alpha}{\alpha'\gamma' + \beta'^2} = \frac{\beta}{\beta'\gamma' + \gamma'^2}$$

before applying the methods of chapter iv. of my book.

But it would have been foreign to the plan of my treatise to have introduced parametric methods when discussing singularities; moreover, the method of which the example is an illustration is only applicable to unicursal curves, whereas my own methods are independent of the deficiency. For example, the various singularities the point constituents of which are nine nodes could not be investigated by means of a unicursal curve without complicating the problem by introducing additional nodes isolated or in combination sufficient in number to reduce the deficiency to zero; and this might limit the generality of the investigation, for when the nodes exceed a certain number they are not arbitrarily situated, but lie on one or more dianodal curves.

A. B. BASSET.

January 14.

NO. 2153, VOL. 85]

MR. BASSET now admits that he has seen neither Zeuthen's two papers of 1876 nor Jordan's book of 1893, thus practically acknowledging the accuracy of my criticism—that the treatment of singular points in his "Geometry of Surfaces" is incomplete. With this admission from Mr. Basset the matter ends, so far as I am personally concerned.

But I must enter a protest against Mr. Basset's inference that the methods of Zeuthen and Jordan are only applicable to unicursal curves; since Mr. Basset has not read the work in question, his only reason for this statement is the fact that the example in my first letter happens to be a unicursal curve. This example was made up so as to provide a simple illustration of the general methods; but these methods hold good for curves of any deficiency.

It is absurd to suggest that parametric methods cannot be used for any algebraic curve; of course, the coordinates are expressed in the form of infinite series (convergent near a particular point of the curve) instead of terminated series. Mr. Basset's objection to using parametric methods would be quite justified if he had provided us with a satisfactory substitute; but he gives no systematic plan for resolving an assigned singularity, and this is the main object of the parametric method as used by earlier writers.

T. J. I'A. B.

FRANCIS GALTON.

FEBRUARY 16, 1822—JANUARY 17, 1911.

THE death of Francis Galton marks, not only the removal of another link with the leaders of the great scientific movement of the nineteenth century—represented by Darwin, Kelvin, Huxley, Clerk-Maxwell, and Galton in this country—but something far more real to those who have been in touch with him up to the last, namely, the cessation of a source of inspiration and suggestion which did not flag even to the day of his death. The keynote to Francis Galton's influence over the science of the last fifty years lies in those words: suggestion and inspiration. He belonged to that small group of inquirers, who do not specialise, but by their wide sympathies and general knowledge demonstrate how science is a real unity, based on the application of a common logic and a common method to the observation and treatment of all phenomena. He broke down the barriers, which the specialist is too apt to erect round his particular field, and introduced novel processes and new ideas into many dark corners of our summary of natural phenomena.

The present writer remembers being asked some years ago to provide a list of Francis Galton's chief scientific achievements for use on a public occasion. It did not seem to him that a list of isolated contributions, such as the establishment of anthropometric laboratories, the introduction of the composite photograph, the transfusion experiments to test pangenesis, the meteorological charts and improved nomenclature, the practical realisation of the possibilities of fingerprint identification, the demonstration of the hereditary transmission of the mental characters in man, the law of regression, the idea of stirps, or the foundation of the novel science of Eugenics, fully represented the nature of the man. What is the spirit of the contributions—large and small, almost two hundred in number—which Francis Galton made to the science of the last sixty years? The unity of those contributions lay largely in the idea that exact quantitative methods could be applied, nay, rather must be applied, to many branches of science, which had been held beyond the field of either mathematical or physical treatment. In this manner his inspiration and suggestion tended to give physical and mathematical precision to a large number of outlying sciences, to meteorology, to anthropology, to genetics,

¹ His first contribution dates from 1849 and concerns a method of printing telegraphic messages at the receiving station.

and to sociology. In this idea itself there is nothing novel; many of the world's great minds have realised the same truth. What did Roger Bacon say towards the middle of the thirteenth century?

"He who knows not mathematics cannot know any other science, and what is more, cannot discover his own ignorance or find its proper remedies."

How was it echoed again, full two hundred years later, by Leonardo da Vinci?

"Nessuna humana investigatione si po dimandare vera scientia s'essa non passa per le matematiche demonstrationi." *Libro di pittura* i. 1.

We wait another century and hear Lord Bacon's aphorism:—

"The chief cause of failure in operation (especially after natures have been diligently investigated) is the ill-determination and measurement of the forces and actions of bodies. Now the forces and actions of bodies are circumscribed or measured by distances of space, or by moments of time, or by concentration of quantity, or by predominance of virtue; and unless these four things have been well and carefully weighed, we shall have sciences, fair perhaps in theory, but in practice inefficient. The four instances which are useful in this point of view I class under one head as *Mathematical Instances* and *Instances of Measurements*."

The words actually used by Lord Bacon for his third and fourth instances are "per unionem quantitatis per prædominantiam virtutis." They cover very fully the sociological, psychological, and genetic phenomena which Francis Galton kept so closely in view.

Another hundred years, and again a great thinker echoes the same idea:—

"Ich behaupte aber, dass in jeder besonderen Naturlehre nur so viel eigentliche Wissenschaft angetroffen werden könne, als darin Mathematik anzutreffen ist." Kant: *Metaphysische Anfangsgründe der Naturwissenschaft*. Sämtliche Werke, Bd. iv., S., 360. Leipzig, 1867.

Lastly, coming down to our own age, the great contemporary of Galton, Lord Kelvin, wrote:—

"When you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."

Clearly, then, Francis Galton was far from originating the idea that exact quantitative methods are applicable far beyond the range of the physical sciences. Wherein lies then his significance for the science of to-day and, perhaps, more still for the science of the future? Not solely in the fact that he sketched in broad lines the manner in which quantitative methods could be applied to many branches of descriptive science, but that without being a professor or teacher of students, he succeeded in creating a school of enthusiastic disciples who, inspired by him, have carried his work and his suggestions into practice in craniometry, anthropology, sociology, genetics, and medicine. The elements in Galton's character and life which made this achievement possible for him are manifold. Heredity, tradition, education, economic independence, all played their parts, and not least among these stands hereditary temperament. No younger man who knew Francis Galton at all intimately failed to be influenced by his marvellous keenness, his wide but wise generosity of suggestion and practical help, and above all, his equable and lovable personality. His manifest pleasure and gratitude for the simplest little thing done for him; his complete respect for the time and duties of others, whether they were his friends or the servants of his

own household, produced a reverence which worked its effect, not only on his immediate environment, but upon the men who carried his inspirations and suggestions into practical science.

The exact biological bearing of religious differentiation upon the creation of human types has, perhaps, never been fully studied. The doctrines of George Fox drew together many men and women of a kindred spirit, and the stringent regulations as to outside marriage led not only to a union of similar natures, but, we venture to think, almost created a biological type. Not only did the Society of Friends unite men religiously, but it produced special temperaments genetically. Even to this day it is strange how men whose families have ceased to be Quakers, yet find that their common sympathies and temperaments arise from Quaker descent. Galton owed the evenness of his temper, his placid acceptance of criticism, but his power of steady persistence in his own work and his own views, very largely to his Quaker ancestry, to the Galton and Barclay blood. The fact that Galton was never in controversy was, of course, partly due to the novelty of many of his methods and ideas; they were beyond his generation, which left them largely on one side. Even his work on the heredity of the mental and moral characters in man was looked upon as merely academic, and its real bearing on social habits is only now being realised and pressed home.

For one man who had read "Hereditary Genius" (1869), "Human Faculty" (1880), and "Natural Inheritance" (1889), there were ten who had studied "The Origin of Species" or "Man's Place in Nature." But the former were the natural sequel to the latter, and Galton realised at once not only, as Darwin and Huxley did, that the new doctrines applied to man, but also that they must eventually be preached as a guide to human conduct in social activities. Looked at from this aspect, his labour to make anthropometry in both its physical and psychical branches an exact science; his discovery that new types of analysis are wanted to replace mathematical function in biological and social studies, and lastly, his advocacy of Eugenics—the science of the right breeding and training of man—are seen to be successive steps in a continuous ascent. The positive conception that science exists to serve man, and that its highest function is not merely to supply his material wants, but to show him how to elevate himself by obedience to biological principles, was the crowning conception of his life. He lived to see the wide appreciation of his teaching in both Germany and America, and, to perhaps a lesser extent, in Great Britain. But he did not live to see the controversies which will inevitably arise, as the world in general more clearly realises that not all its customs, not all its beliefs, not all its supposed morality and charity, are consonant with scientific knowledge.

But if the fact that Galton was never in controversy had partly a basis in the historic evolution of ideas, it was also deeply rooted in his temperament, the temperament of one portion of his stock. He considered criticism, not as it affected the reputation of his own work, but as it affected his own estimate of the validity of his own work, and he adopted it or passed it by accordingly. Only once do I remember on a public occasion a slight severity in his usually gentle tone. A medical man of distinction, speaking obviously without any knowledge of the literature of the subject, had asserted that the supposition that the children of parents with certain mental and moral peculiarities would reproduce these features, arose from a totally false conception of what the laws of heredity are. The mental and moral aptitudes were for the speaker

outside the purview of hereditary investigation. Galton's reply was very simple: Much of what his critic had said "might have been appropriately urged forty years ago, before accurate measurement of the statistical effects of heredity had been commenced, but it was quite obsolete now."

That is the extreme limit to which Galton's Quaker temperament ever, in the presence of the present writer, allowed him to reply, and here it was a question of checking a vague assertion which swept away the best part of a man's life work unexamined. That this calmness of mental attitude was very largely innate and not due to environment, is well brought out by a quaint little biography of the first eight years of his life, written by his mother (Violetta Galton—half-sister of Charles Darwin's father) when he went to a boarding-school in 1830.¹ His after-tastes and temperament, his great good nature, his calm temper, his resourcefulness and courage,² are sufficiently indicated by a mother who was closely observant, but who could have no knowledge of the future distinction of her youngest child. A further fundamental factor of Galton's mental outfit was his extraordinary mechanical ingenuity. This may also have been a Darwin heritage, for it has been shown by other members of the stock. At the same time his paternal grandfather, Samuel John Galton, was not only a statistician, but a man of mechanical tastes and a friend of Boulton and Watt, and the same form of ability was markedly evidenced in another grandson, Sir Douglas Galton.

Francis Galton had the mechanical ingenuity which makes a great engineer or experimentalist; his suggestions were always of the simplest kind, and he used the simplest constructions and the simplest materials. Most of his friends will remember his delight in some almost primitive solution of a mechanical difficulty, that possibly they had themselves pondered over and brought to him in despair. Nothing worries the secretary of a scientific society or the editor of a journal more than the vagaries of an author who provides diagrams wholly unsuited to the page-size of their publications; Galton would be ready with a photographic method of modifying the linear scales in different ratios in two directions. Nothing is more trying at lecture or theatre than the tall person or hat; Galton had his "hyperscope"—a simple tube with two reflecting mirrors at 45° by which he saw over or round them, and he would use it in a crowd when he wished to see what was going on beyond it. Or he would carry a wooden brick in a parcel with a long string attached to it; slowly lowering it in a crowd, he would stand on his block of vantage, and raise it again by its string afterwards without attracting observation. Elsewhere it has been said that, if one wanted to put a saddle on a camel's back without chafing it, to manage the women of a treacherous African tribe, to measure a snail's shell, or to work a theodolite in the midst of London traffic, Galton would tell you how it might be done.

Beyond mechanical ingenuity³ he had great wealth of illustration; what he could possibly represent to the eye, he would do, for he had a firm belief that graphic representation is more impressive than mere numbers. Within a fortnight almost of his death, seated outdoors in a shelter, he was discussing with the present

writer as eagerly and keenly as he would have done twenty years ago, the best method of graphically representing and comparing typical racial crania.

Through the last years of life, apart from his eugenic work, he was very busy in trying to deduce quantitative measures of general likeness; evidences of this were given in his letters on portraiture to this *Journal*, and in his attempts to make a graduated scale of "blurrers," which like a photometric wedge would equalise divergence until differentiation of the two compared portraits became impossible. Photographs of members of the same family—"similar and similarly situated," as the mathematicians have it—"blurred" more readily than those of strangers in blood. These things amount, not to complete fulfillments, but to suggestions and inspirations. But Francis Galton realised among the earliest that a comparison of the individual organs and characters of local races needs supplementing by a comparison in some manner of two "index" numbers, which by their deviation shall measure the similarity or diversity of these races, each as a unit complex of many individual characters.

Judged from the modern specialist standard, Galton was, perhaps, not a "mathematician," but he had enough mathematics for most of the purposes of scientific observation, and he knew how to enlist mathematical aid when he required it. Few of those who have really studied his work or come in contact with his singularly clear and logical mind, would have wished his education other than it was. The training in observation provided by hospital clerking under a good clinical teacher, could never have been replaced with profit by years spent over symbolic analysis; the man who would patiently watch the workman in a foreign country plying his chisel or trowel in order to learn differentiation of method in craftsmanship, and then take a lesson himself in handling the tool in the native way, was a born observer, whose talents lay in other fields than the higher abstract analytic. Yet the essential feature of his work was, and his reputation with the future will largely depend on, his extension of analytical methods to the descriptive sciences. Without Gauss the work of Quetelet would have been impossible. Without Quetelet we should perhaps have missed Francis Galton, and from Galton and his school the new methods have spread, and are spreading into the most varied branches of science; in medicine both treatment and diagnosis will be influenced by them, in physiology and psychology their advantages are being admitted, in biology, anthropology, sociology and its latest offspring—eugenics—their importance has been fully recognised. And wherein does the validity of this new treatment consist? It lies very simply in this, that Galton following Quetelet recognised that causation expressible in terms of mathematical function was not the only, or even the chief category, under which men of science can work; that exact methods were applicable to that looser relation or association, which now passes by the name of correlation. To Galton is due the honour of having reached the first simple measure of this relationship, and in the earlier writings of his keen disciple Weldon, we find it called "Galton's Function," a name which had to be dropped as the conception became more general and its types differentiated and classified. It ceased to be possible to call after its discoverer a philosophical category wider than that of causation, and embracing causation as a subclass.

The history—at least, the formal history—of his discovery is very suggestive of the man and his method. He had been studying the size of organs in parents and their offspring, and he formed what is now termed a correlation table; that numerical table he sought to

¹ Would it be safe to suggest that Galton inherited from his Darwin mother his views on family history? Is "The Life History Album" (Macmillan, 1884 and 1901) with its spaces for observations and photographs of the child, a lineal descendant of this biography with silhouette illustration?

² This was of much value to him in his later travels. When five years old his mother took him into a field where the servants were trying to catch some geese. Francis immediately ran among them and seizing the old gander by the neck brought him to his mother muttering at the same time to himself the lines from "Chevy Chase":

"Thou art the most courageous knight,
That ever I did see ———"

³ Many of the contrivances devised for his first Anthropometric Laboratory are still in current use.

represent graphically, and to his delight and surprise the rough contour lines, which he drew on the table itself, had the appearance of a family of similar and similarly situated ellipses. The line which joined the means of the organs of the offspring for a given organ in the parent was seen to be straight, and to be the locus of the points of contact of a system of parallel tangents to the ellipses. Galton had reached from his graph the fundamental idea of the simplest type of correlation surface—the generalised Gaussian with linear "regression," and he was not slow to realise its great importance and its wide application to the interrelationship of contemporaneously varying or associated phenomena. He summoned mathematical aid, and with the help of Mr. Dickson determined the form of the Gaussian frequency surface. Years afterwards it was discovered that the mathematics of that surface had been worked out by Bravais, in considering the distribution of shots over a target. Nowadays we know that there are frequency surfaces which are not Gaussian. Wherein then does the transcendent importance of Galton's work lie? Why, in the fact that he was *not* considering shots at a target, but that he was seeking for a key to open a door for exact quantitative methods into the whole wide range of vital phenomena. From Bravais' mathematical treatment of the Gaussian surface nothing followed, until Galton independently rediscovered it with no idea of shots at a target in his mind, but with the idea of investigating problems in genetics, in evolution, and in sociology.

His work first pointed out to us how the whole field of nature lay open to exact numerical treatment, if we dropped the category of causation and adopted that of correlation.¹ Not from Bravais' mathematics, but from the suggestion and inspiration of Galton's contour lines on his table of observations, has sprung the whole body of modern statistical theory. The problem of evolution, and the study of heredity, were for Galton actuarial problems. Needless to say, he did not place on one side the study of individuals, he was ever in sympathy with individual observation and experiment. But, as the late Prof. Weldon expressed it in a sentence which had Galton's hearty assent, "the actuarial method must be an essential part of the equipment of any man who would make and understand such experiments." It was in this very sense that Galton initiated the Royal Society "Committee for conducting Statistical Inquiries into the Measurable Characteristics of Plants and Animals." And for a long time he had in mind the eventual foundation and endowment of an experimental station for variation, heredity, and selection, treated by statistical methods. If his gift to posterity be now found to have taken another form from his original idea, the change is not unassociated with his views on the need for adequate statistical treatment, or with the change of purpose and method which led to his withdrawal from the Evolution Committee.

If we turn from the inspiration and suggestion provided by Galton in many varied forms of inquiry to his actual contributions to our knowledge, two will occur to the minds of most readers, not necessarily

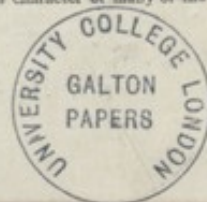
¹ "The conclusions . . . depend on ideas that must first be well comprehended, and which are now novel to the large majority of readers and unfamiliar to all. But those who care to brace themselves for a sustained effort, need not feel much regret that the road to be travelled over is indirect and does not admit of being mapped beforehand in a way that can clearly understand. It is full of interest of its own. It familiarises us with the measurement of variability and with curious laws of chance that apply to a vast diversity of social subjects. This part of the inquiry may be said to run along a road on a high level, that affords wide views in unexpected directions, and from which easy descents may be made to totally different goals to those we have now to reach. I have a great subject to write upon, but I feel keenly my literary incapacity to make it easily intelligible without sacrificing accuracy and thoroughness."—(Francis Galton, "Natural Inheritance," 1889, p. 2). It is those "easy descents" to "totally different goals" which have proved very arduous, not because they were not obvious and easy so soon as the "high level road" had been made, but because they turned out to lead into strictly preserved but largely untilled "strays."

because they are the most important, but because some statement of them has crept into elementary textbooks and popular works on science. The first of these is the oft-quoted "Law of Regression"; it was not originally a theoretical deduction but deduced by Galton from his own measurements and observations on individuals. It amounts to the statement that if in a stable population—i.e. one in which no selection is taking place, and which is mating at random—a group of all the parents be selected which have a character of a given intensity, then the average of the same character in their offspring will be nearer to the mean of the whole population than the parental value. As Galton stated this statistical result, it has been over and over again verified by mass-investigations. But it has been singularly often misinterpreted by commentators. One group of them extended it into a general law that all populations tend to regress to mediocrity, if we suspend natural selection; they quite overlooked Galton's statement that the population was *stable*. No such general regression to mediocrity was involved in Galton's law of regression; it was a statistical law of distribution of offspring resulting from the *stability* of the population. Another group of critics selected certain special parents, overlooking Galton's word "all," and endeavoured to show that the law did not apply to their offspring, and must therefore be erroneous. The fact is that the very law itself, when applied to the offspring of somatically selected ancestry and not to all parents of the class, shows the cessation of regression, and it is upon this very cessation of regression for selected sub-classes that the general stability of the Galtonian population depends.

The second contribution to the theory of heredity with which Galton's name has been generally associated is that termed the "Ancestral Law of Heredity." The conception Galton had in mind was the following one: in a population mating at random and stable in character, what would be the *average* relation of each class of individuals in the new generation to each grade of their ancestry? Naturally, he measured the relation by his new method of correlation, practically by aid of the steepness of his regression lines. The degree of resemblance to successive grades of the ancestry was found to diminish in a geometrical progression. The exact numbers reached by Galton from his data ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, &c.) have not been verified by further observation. But the fundamental features of his method, the idea of applying multiple regression and the diminution of the degree of resemblance in a geometric series, have been found correct. Indeed, we now realise that almost any determinantal theory—including that of Mendel—leads directly to Galton's Law of Ancestral Heredity as stated above. No direct test of adequate¹ character has yet been made on Galton's Law, as it is commonly cited—a form which he originally stated himself with great hesitation ("Natural Inheritance," p. 136), and which does not appear wholly in accord with other parts of his observational or theoretical treatment. Strange as it may seem, no one has yet worked out the relationship corresponding to the usually stated form of Galton's Law for a simple Mendelian population breeding at random; the theoretical investigation of it is beset with many analytical difficulties and not a few logical pitfalls. All the criticisms of this law have turned on results deduced from selected gametic ancestors.

It has been asserted with some plausibility that Galton's deductions would cease to be of any value

¹ Certain investigations have been made, but in every case they will be found not to fulfil the conditions as to average relations, which Galton laid down. Galton's own material for "Basset Hounds" is really inadmissible, for there is scarcely any doubt about the fictitious character of many of the putative sires.



if we could discover the physiological causes of heredity. To this, we think, answer may be made that Nature does not work like the breeder by testing gametic qualities. She proceeds by selecting with stringency certain grades of somatic qualities, and the intensity of quality, not the gametic value of the individual is her index to survival. Without some degree of correlation between somatic character and gametic value, the Darwinian theory must collapse. This point Francis Galton had ever in mind, and his views on heredity, and his treatment of the subject, always turned on the effect of somatic selection of the ancestry in modifying the somatic characters of the offspring. Hence the establishment of a definite theory of physiological heredity would at once have to be followed by a theoretical deduction from that theory of the degree of resemblance between somatic characters in ancestry and offspring in a population living under natural conditions. The questions of fertility and death-rate in such a population are actuarial studies. No physiological inquiry as to heredity can supersede those studies, but such an inquiry may well confirm, or it may modify, the laws originally stated by Francis Galton for populations mating at random. So far as it is possible to judge at present, current physiological theories of heredity tend rather to confirm than refute Galton's conclusions.

Of the work of the last decade of Galton's life, it is possibly too early yet to speak with any decisive judgment. Darwin, writing to Wallace in 1857, uses the following words:—

"You ask me whether I shall discuss 'man.' I think I shall avoid the subject as so surrounded with prejudices, though I fully admit it is the highest and most interesting problem for the naturalist."

Darwin's later writings testify that he did not avoid the subject, but probably the existence of the prejudices to which he refers prevented him from accentuating the direct practical bearing of the doctrine of evolution on human conduct. The result of this attitude of the earlier evolutionists was that their strength was opposed to one wing only of the army of intellectual inertia. Their critics were theologians and metaphysicians; there was no question raised of the bearing of evolution on social habit. Evolution appeared merely as a problem of a man's intellectual attitude towards the universe, it was a philosophical belief, not a practical code of conduct. Francis Galton's Huxley lecture of 1901 "On the possible Improvement of the Human Breed under existing conditions of Law and Sentiment," slender as it seemed at the time, was really the clarion call which told us that the time was ripe for the recognition that the doctrines of evolution and heredity were more than intellectual belief, they were destined to control the conduct of men in the future and determine the relative efficiency of nations. Others may have thought, some may have said, the same thing before;¹ but to Francis Galton belongs the credit of having said it at the psychological moment, and said it with the em-

phasis that made many earnest men and women understand its gravity. Later, in his paper of 1904, "Eugenics: its Definitions, Scope, and Aims," Galton more closely defined the lines of development he had in view for the new science:—

"Persistence in setting forth the national importance of eugenics. There are three stages to be passed through: *firstly*, it must be made familiar as an academic question, until its exact importance has been understood and accepted as a fact; *secondly*, it must be recognised as a subject the practical development of which deserves serious consideration; and *thirdly*, it must be introduced into the national conscience, like a new religion. It has, indeed, strong claims to become an orthodox religious tenet of the future, for eugenics cooperate with the workings of Nature by securing that humanity shall be represented by the fittest races. What Nature does blindly, slowly, and ruthlessly, man may do providently, quickly and kindly. As it lies within his power, so it becomes his duty to work in that direction; just as it is his duty to succour neighbours who suffer misfortune. The improvement of our stock seems to me one of the highest objects that we can reasonably attempt. We are ignorant of the ultimate destinies of humanity, but feel perfectly sure that it is as noble a work to raise its level in the sense already explained, as it would be disgraceful to abase it. I see no impossibility in eugenics becoming a religious dogma among mankind, but its details must first be worked out sedulously in the study. Over zeal leading to hasty action would do harm, by holding out expectations of a near golden age, which will certainly be falsified and cause the science to be discredited. The first and main point is to secure the general intellectual acceptance of eugenics as a hopeful and most important study. Then let its principles work into the heart of the nation, who will gradually give practical effect to them in ways that we may not wholly foresee."

We have cited the whole paragraph, for it is essentially typical of the man, and some word of his message to his nation may fitly appear here. Conspicuously moderate in tone, the study at each point placed before the market-place, it was, indeed, a wonderful appeal for a man more than eighty-two years of age to make from the public platform. It signified that the time was ripe for the labours of the biologist to be turned to the breeding of man. Galton called upon the biologist, the medical man, and the sociologist to grasp what evolution and heredity mean for man, to make out of their science an art, and work thereby for the future of their nation. Nor has that appeal miscarried; its effect may be traced even amid the din of controversy and clash of diverse opinions in almost every recent book, or discussion of heredity or evolution. Those of us, who initially doubted the wisdom of propagandism beyond the academic field, have lived to see a very wide public impression made, not only in this country, but notably in Germany, America, and some of our colonies. If that movement remains within the lines Galton assigned to it—"no over-zeal leading to hasty action" which will "cause the science to be discredited"—then we firmly believe that to the future Galton's life will appear as a rounded whole—the youth of experience and observation, the manhood of development and discovery of method, the old age of practical application.

His school and disciples have lost a leader, but not before he had lived to put the final touches to his work. Of his generosity and helpfulness, his personal modesty and simplicity of nature, many of those who came in touch with him can bear evidence by remembered talk, by letter, and by act. Someday, perhaps, these things may be put together as a memento of

¹ For example, Sir W. Lawrence wrote in 1819:—"The hereditary transmission of physical and moral qualities, so well understood and familiarly acted on in the domestic animals, is equally true of man. A superior breed of human beings could only be produced by selections and exclusions similar to those so successfully employed in breeding our more valuable animals. Yet, in the human species, where the object is of such consequence, the principle is almost entirely overlooked. Hence all the native deformities of mind and body, which spring up so plentifully in our artificial mode of life, are handed down to posterity and tend by their multiplication and extension to degrade the race. Consequently the mass of the population in our large cities will not bear a comparison with that of savage nations, in which, if imperfect or deformed individuals should survive the hardships of their first rearing, they are prevented by the kind of aversion they inspire from propagating their deformities." What finer text for the eugenist? But Lawrence spoke to a nation still flushed with Waterloo, while Galton, eighty-five years later, appealed to its grandchildren still smarting from South African defeats, and dimly conscious that all was not well with either its physical or mental vigour.

the man whose teaching has just ended, but whose life-work has only begun to run its course. Rewards came to Francis Galton—medals, honorary degrees, corresponding memberships of many learned societies—they came unsought, but not unappreciated. His very modesty made him take an almost childlike joy in these recognitions of his worth, and the present writer remembers with what pleasure, but a few weeks ago, Galton showed him his recently received Copley medal. But these things were not of the essence of his life. Few men have worked so little for reputation and so much for the mere joy of discovering the truth. His three chief pleasures in life were first to discover a problem, secondly to solve it by a simple but adequate process, and thirdly to tell a congenial friend of the problem and its solution. What he cared chiefly for was the sympathy of men who appreciated his special type of work and understood its relation to human progress. Had he spoken of himself and his feelings, which he rarely did, he would, we think, have described his purpose in life much in the words of Huxley:—

"To promote the increase of natural knowledge, and to further the application of scientific methods of investigation to all the problems of life to the best of my ability, in the conviction which has grown with my growth and strengthened with my strength, that there is no alleviation for the sufferings of mankind except veracity of thought and action, and the resolute facing of the world as it is when the garment of make-belief, by which pious hands have hidden its uglier features, is stripped off."

But in the fulfilment of his purpose Francis Galton was an optimist. He believed that man can not only physically control his environment, but with fuller biological knowledge his future development. Not on this or that contribution to the records of science, but on the justification of this belief, will depend his fame in the roll of the ages. There are some of us who believe that among the great names cited at the commencement of this paper, Galton's will not be the last, for he has given an inspiration which will grow to full fruition. Our country has been the land of dominant scientific ideas rather than of massive contributions to the records of science—gravitation, the survival of the fitter, the electromagnetic theory—may we yet add—the biological control of human development? If so, the name of Francis Galton will be closely associated with the coping-stone of the edifice, which had its foundations first securely laid by his half-cousin, Charles Darwin.

MEGALITHIC MONUMENTS AND PRE-HISTORIC CULTURE IN THE WESTERN MEDITERRANEAN.¹

AMONG the many questions to which the attention of the British School at Rome is now directed none is of more interest and importance than the exploration of the megalithic remains and primitive culture of the western Mediterranean which is now in progress.

Sardinia, much the most promising field of study, is in the hands of Dr. Mackenzie, the value of whose report is greatly increased by the admirable plans prepared by Mr. F. G. Newton. First among these remains come the Nuraghe or fortified towers, of which more than one type has been identified. The most primitive form is perhaps the simple strong tower of circular shape, to which succeeded the type

represented by that of Voes, a massive triangular building, having four circular chambers on the ground floor and a central unroofed courtyard opening into a massively constructed corridor leading to smaller inner rooms. Above this was a second storey, now ruined, which may have formed the living part of the house and the abode of the women, while the lower floor was occupied partly by guards and attendants and partly used as storehouses. These forms soon develop into more complex types, until we reach an elaborately fortified enciente with massive corner towers, like that of Nossia. Dr. Mackenzie reasonably suggests that in the Bronze age the lords of these Nuraghe may have possessed only limited sovereignty, and that these elaborate fortifications were designed in the event of incursions by the neighbouring local chiefs.

The chief interest of the report lies in the fact that for the first time a seriation of the dolmens is attempted, and that these are now brought into relation with the Nuraghe. First comes the dolmen in its primitive form, familiar in western Europe—a massive slab resting on upright supports and forming a rude chamber. The next stage is illustrated by the monument at Maone, which, instead of being a mere cella with vertical supports, is partly hewn into the sloping rock, partly built up with rough coursed masonry, on the top of which rests the cover-slab. Then comes the form, represented by the dolmen of Su Covecco, which is on the point of being elongated and becoming a so-called "Giants' Tomb." In the latter the apse-like arrangement persists, but the cella and well of the enclosure are much extended, and exhibit a whole series of cover-slabs instead of the single massive stone in the primitive dolmen type. The structure thus often simulates the form of an inverted boat, like the Naveta tombs of the Balearic Islands, which gained their name from this fact. They were perhaps designed to symbolise the boat which conveyed the souls of the people, immigrants from beyond the sea, to a place of rest across the ocean. But the original dolmen type seems to have survived into this later period, and in one case the tomb is provided with a secret entrance, which may have been intended for subsequent interments, while the smaller portal hole in the front was reserved for the periodical rites in honour of the ancestral spirits.

Mr. Peet's report on the prehistoric period in Malta is mainly devoted to a criticism of the views of Albert Mayr, who regarded the culture of prehistoric Malta as mainly Ægean. Mr. Peet, dealing in succession with the arguments based on the use of overlapping or splayed masonry, the occurrence of the spiral form of ornament, and the bacyclic or pillar worship, points out that none of these have special Ægean or Mycenaean provenience, and while not denying the existence of Ægean culture in Malta, he regards it impossible to attribute all that appears in the island to this source.

It may be hoped that the establishment of a new society for the promotion of Roman studies will give a fresh impetus and supply increased resources for the survey which has been so well started by Dr. Mackenzie and Mr. Peet.

THE FLIGHT OF BIRDS.

TO *La Nature* for December 11, 1910, M. Lucien Fournier contributes a well illustrated article on the flight of birds. One of the pictures, showing various positions taken by the wings of gulls in flight, is here reproduced. Three other of the illustrations, namely

¹ "Papers of the British School at Rome." Vol. v. Pp. xiv+471+47 plates. (London: Macmillan and Co., Ltd., 1910.) Price 42s. net.



a flight of gulls, a stork leaving its nest, and a flying vulture, are particularly good.

The author separates birds into four groups, according to the characteristics of their flight, as follows:—(1) Wings always flapping; (2) flapping alternating with downward gliding; (3) Flapping and gliding with maintained level; (4) gliding and soaring only.

This classification can hardly be considered satisfactory. It is suggested that a bird can fly without any expenditure of work provided that there is even a slightly variable wind, and the article concludes with the hope that the day is not far distant when (by proper automatic devices to take advantage of wind variation) flying machines will be able to do without engines.

In reality no bird or flying machine can maintain

SCIENCE AND LITERATURE.

AN eloquent address on language and literature was delivered on January 27 by Lord Morley of Blackburn, as president of the English Association. Parts of the address dealt with the relation between science and letters, with particular reference to the use of scientific knowledge in poetry, and the antithesis between documentary fact and artistic style. Science aims at concise and truthful expression; and while Lord Morley testified to the value of its influence upon literature, he doubted whether scientific ideas had inspired even Tennyson to the best verse, whether the desire for fact scientifically recorded is not a misfortune in the treatment of modern history, and whether concentration upon scientific truth has not a



A group of Gulls in flight, showing various positions of the wings of birds.

its level or rise in still air or in a uniform horizontal wind without the expenditure of power, and although it is true that power may be gained from the air by a proper utilisation of the differences of the horizontal velocity in the different regions traversed, these differences would have to be large even for the sustenance of long-winged birds, and there is no direct evidence that this kind of flight is habitual with them.

It is not improbable, however, that with their long experience birds have found out its possibility, and the skimming of some birds near the surface of the waves, where the variations of velocity are great, may be a case in point, but there can be little doubt that when flying at a considerable height birds depend for their support on an upward component in the velocity of the wind.

A. MALLOCK.

deadening effect upon emotional conceptions and pleasures.

Lord Morley's tribute to some scientific masters of clear and simple exposition resigns us to his subsequent conclusions. Keats could not forgive optics for robbing the rainbow of its wonder and mystery, and Lord Morley seems to suggest that the literary art which deals with scientific studies and results is not of the highest. But poetry is imagery, and new images of Nature are made possible by every discovery of the attributes and meaning of the things around us. The poetry which neglects advances of natural knowledge becomes conventional in form and substance, concerning itself only with the wonders of childhood because it does not understand the higher and grander mysteries which science has failed to penetrate. His-

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UNIVERSITY OF LONDON.

FRANCIS GALTON RESEARCH FELLOWSHIP IN NATIONAL EUGENICS.

A Research Fellowship has been founded by Mr Francis Galton, F.R.S., to promote the Study of National Eugenics, *i.e.*, the study of the agencies under social control that may improve or impair the racial qualities of future generations either physically or morally.

The Fellowship is established on the following conditions :—

(1) The value of the Fellowship is £250 per annum ; it is tenable for one year in the first instance, and for two subsequent years on favourable Report from a Special Committee at the end of the first and second year's tenure respectively.

(2) The endowment not absorbed by the stipend of the Francis Galton Research Fellow, amounting to about £250 per annum, will be placed at the disposal of the Committee for the purpose of aiding his work, subject to the general approval of the Senate.

(3) The duties of the Fellow will be to devote the whole of his time to the study of Eugenics, subject to the approval and under the general direction of the Committee. In particular he will be required :—

(a) To acquaint himself with statistical methods of enquiry, and with the principal researches which have been made in Eugenics, and to plan and carry out further investigations thereon.

(b) To institute and carry on such investigations into the history of classes and families as may be calculated to promote the knowledge of Eugenics.

(c) To prepare and present to the Committee, though not necessarily for publication, an annual Report on his work ; and to give from time to time, if required or approved by the Committee, short Courses of Lectures on Eugenics, and in particular on his own investigations thereon.

(d) To prepare for publication at such times and in such manner as may be approved by the Committee (and at least at the end of his tenure of the Fellowship), a Memoir or Memoirs on the investigations which he has carried out.

Applications for the above Fellowship must be sent in duplicate, accompanied by copies in duplicate of not more than three testimonials, and must reach the University not later than November 10th, 1904. Additional references may be given.

ARTHUR W. RÜCKER,
Principal.



UNIVERSITY of LONDON.

f.2rv

The SENATE invite APPLICATIONS for the FRANCIS GALTON RESEARCH FELLOWSHIP in NATIONAL EUGENICS. The Fellowship is of the annual value of £250, is tenable for one year in the first instance, and is renewable for two subsequent years. An additional sum of £250 a year is provided, and can be used at the discretion of the Committee in assisting the work of the Fellow. Applications, accompanied by copies of not more than three testimonials, must reach the University not later than November 10th, 1904, and should be addressed to the Principal, University of London, South Kensington, S.W., from whom further particulars can be obtained.

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UNIVERSITY INTELLIGENCE.

CAMBRIDGE, WEDNESDAY.

At Gonville and Caius College yesterday Robert Heath Lock, B.A., late Frank Smart Student, was elected to a Fellowship.

Mr. Lock was placed in the first class of the Natural Sciences Tripos, Part I., in 1900, and in the first class of Part II. the following year. For the last two years he has been engaged in research at the Royal Botanical Gardens, Peradeniya, Ceylon.

LONDON, WEDNESDAY.

"NATIONAL EUGENICS."

The senate, at the meeting this afternoon, accepted an offer from Mr. Francis Galton, F.R.S., to endow a fellowship in the university for the promotion of the study of "National Eugenics," defined as "the study of the agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally." The person appointed to the fellowship will be required to devote the whole of his time to the study of the subject, and in particular to carry out investigations into the history of classes and families, and to deliver lectures and publish memoirs on the subject of his investigations. Full particulars of the post will be advertised shortly. The endowment is sufficient to provide not only for the fellowship but also for the salary of an assistant and for the general expenses of the contemplated work, which it is intended to locate in one of the colleges or other institutions connected with the university.

CANDIDATES FOR COMMISSIONS.

In connection with the War Office scheme for the appointment of university candidates to commissions in the Regular forces, the Senate has appointed Colonel H. A. Sawyer to be instructor to the university in tactics and strategy, military history, military engineering, and military topography, and Lieutenant-Colonel F. N. Maude to be instructor in military law and administration.

RESIGNATION OF PROFESSOR HUDSON.

Professor W. H. H. Hudson has resigned his membership of the senate as one of the representatives of the Faculty of Arts, which body has elected the Rev. Professor Alfred Caldecott, M.A., D.D., in his place. Two other vacancies in the senate have been caused by the resignations of Dr. Carey Foster and Sir Henry Howse, who represented respectively University College and the Royal College of Surgeons of England.

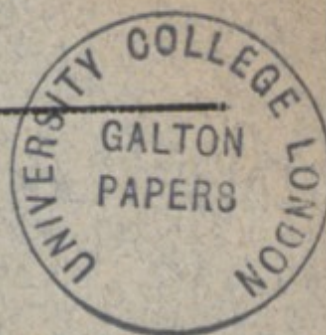
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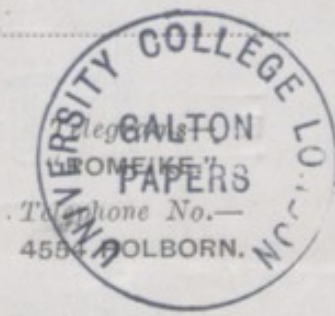
Mr. Francis Galton, F.R.S., has made an offer, which has been accepted by the Senate of the University of London, to endow a Fellowship in the University for the promotion of the study of "National Eugenics," defined as "the study of the agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally."

The endowment is sufficient to provide not only for the Fellowship, but also for the salary of an assistant and for the general expenses of the contemplated work, which it is intended to locate in one of the colleges or other institutions connected with the University.

F Galton

f.5r

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NO. 21,542
LONDON, WEDNESDAY, FEBRUARY 1, 1906.
PRICE 3d.

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| <p>ROYAL WARRANTS.</p> <p>His Majesty has been graciously pleased to give the following Warrants in pursuance of the Statute in that behalf bearing date the 21st of May 1905.</p> <p>THE ROYAL WARRANTS.</p> <p>His Majesty has been graciously pleased to give the following Warrants in pursuance of the Statute in that behalf bearing date the 21st of May 1905.</p> | <p>PERSONAL.</p> <p>His Majesty has been graciously pleased to give the following Warrants in pursuance of the Statute in that behalf bearing date the 21st of May 1905.</p> | <p>PARLIAMENTARY.</p> <p>His Majesty has been graciously pleased to give the following Warrants in pursuance of the Statute in that behalf bearing date the 21st of May 1905.</p> | <p>GENERAL.</p> <p>His Majesty has been graciously pleased to give the following Warrants in pursuance of the Statute in that behalf bearing date the 21st of May 1905.</p> |
|---|---|--|--|

2/2/06

Mr. Francis Galton, F.R.S., has given a further sum of £1,000, which has enabled the University to revise and extend the scheme for the study of national eugenics founded under his previous benefaction, and will provide for the carrying on of the work of the eugenics laboratory for the next three years. Mr. David Heron, M.A., has been appointed Galton research Fellow in national eugenics, in succession to Mr. Edgar Schuster, M.A., resigned; Miss E. M. Elderton has been appointed Galton research scholar, and Miss Amy Barrington (mathematical tripos, Cambridge) computer. The work in this subject will be carried on under the supervision of Professor Karl Pearson, F.R.S., in consultation with Mr. Francis Galton. It is the intention of the founder that the laboratory shall act (1) as a storehouse for statistical material bearing on the mental and physical conditions in man and the relation of these conditions to inheritance and environment, (2) as a centre for the publication or other form of distribution of information concerning national eugenics. Provision is made in association with the biometric laboratory at University College for training in statistical method and for assisting research workers in special eugenic problems. Short courses of instruction will be provided for those engaged in social, anthropometric, or medical work and desirous of applying modern methods of analysis to the reduction of their observations. The laboratory, which is in connexion with University College, is temporarily established at 88, Gower-street, W.C.

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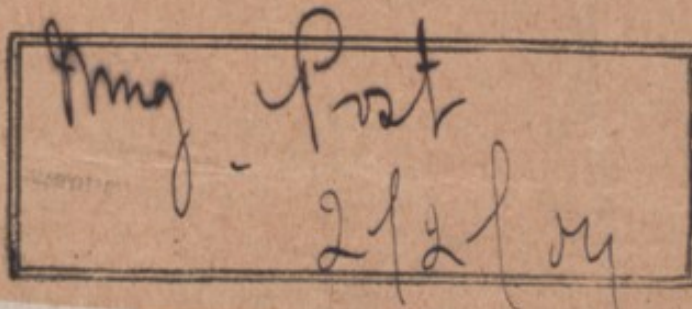
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LONDON, FRIDAY.

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British Medical Jnl
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*Francis Galton Laboratory for the Study of National
Eugenics.*

As the result of a further gift of £1,000 by Mr. Francis Galton, F.R.S., the Senate have been enabled to revise and extend the scheme for the study of National Eugenics founded under his previous benefaction; this sum will provide for the carrying on of the work of the Eugenics laboratory for the next three years.

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From

Medical Officer
1. W. 20

EXPECTATION OF LIFE OF CONSUMPTIVES AFTER SANATORIUM TREATMENT.

The report from the Galton Eugenics Laboratory of the University of London on the duration of life amongst consumptive patients discharged from sanatoria as cured to which we have already referred * was adversely criticized in the columns of the Manchester daily papers on a recent occasion by Dr. R. W. Marsden, who is one of the physicians to the Manchester Hospital for Consumptives. Dr. Marsden pointed out that only quite recently Dr. Karl Pearson has admitted that at the present moment the data at the disposal of statisticians are not sufficiently precise or reliable to admit of a satisfactory or valuable comparison being made between the present conditions and pre-sanatorium times. After expressing the opinion that consumption is, strictly speaking, a plague on our civilization dependent on bad hygiene, using the phrase in its widest sense, and that a grievous error will be made if it is regarded chiefly from its infective side, and the constitutional, social and financial factors are thrown into the background, he stoutly asserted that the disease is curable

in certain stages and in certain individuals. But the evidence of this curability was obtained before the days of the sanatorium, the treatment in which is merely the combined essence of all the factors which had been found helpful in bringing about arrest of the disease, and so far from being considered a failure, such treatment must constitute the basis of any improvement. It is, says Dr. Marsden, quite easy to find grounds for dissatisfaction with results of the treatment of consumption, and if the disease were not so dread a scourge there would not be the same feelings with regard to it. Being admittedly difficult to deal with, it must be tackled early. Something must be done to relieve individual suffering, and he strongly maintains that at the present time all that was understood by sanatorium treatment constituted the only effective means that is possessed for attacking the disease in each patient.

f.1

MR. HUTCHINSON has taken the freedom with a friend, of printing, without his knowledge, the following lines written by him after he had been at Church at Hanford on Sunday evening, July 19. Mr. H. is not willing that the Inhabitants of Hanford should be unacquainted with lines which he is sure they will be pleased to possess, and which he hopes that, by the blessing of God, none will read without serious thought, and lasting improvement.

Blurton Parsonage,
July 21, 1840.

1.

How simple and meek were the words he spake!
And the voice was of one who believ'd them so true
That gladly he'd die for the Gospel's sake,
Or follow'd by all, or heeded by few.

2

He bade them remember the truths once heard,
For to life or to death led the path they trod;*
'Twas their's to receive, or reject his word,—
Though utter'd by man, yet the message of God.

* To the one we are the savour of death unto death; and to the other the savour of life unto life. II. Cor. ii. 16.

3

"My brethren! farewell!" was the Watchman's cry,
"Ye faithful! I charge you, still faithful remain."
"Ye heedless! repent ye; O why will ye die?"
"Repent! for we meet at the judgment again."

4

He paus'd,—and each knee was in reverence bow'd,
Nor hastily rais'd, this last blessing o'er,—
For many a prayer from amid that crowd
Was breath'd by lips that scarce pray'd before.

5

Then slowly and sadly, one by one,
The lingering villagers stole away;
Nor all from the Churchyard gate had gone,
When the bright sun shed his parting ray.

6

Like that bright sun, which again shall rise
From his crimson throne in the far off west,
With light and with hope to paint the broad skies,
Ere he turns him once more to his cloudy rest;

7

Like him, and ere long, all eyes will be seal'd,
And Pastor and Flock lie down in their tomb;
But never, like him, when the judgment's reveal'd
Shall their Day-Star* be lost in a twilight of gloom.

* I, JESUS, am the bright and morning Star. Rev. xxii. 16.

the difference between practical objects and brilliant generalization. In our great constitutional documents, from Magna Charta to the Act of Settlement, and also in our leading acts of Parliament, there is no theory—hardly an abstraction. The principles may sometimes be very large, but they are comprehended in a remedy for some actual grievance or a claim to some inherited right. The petitions or cahiers of the States General often seem to have been nearly as much political treatises as practical documents. M. Thierry traces in them, as a thing to be proud of, the ideas that subsequently turned up in full maturity during the great revolution of 1789. The propositions were sometimes reckoned by hundreds; from all which nothing was gained but promises, and not always an answer. In England, a few things at a time were pressed for till they were obtained.

From 1302, when the first States General was assembled under Philippe the Fair, until 1614, which, under Louis the Thirteenth, witnessed the last meeting before 1789, M. Thierry gives continuous notices of their transactions. As the documents themselves probably follow in the body of the original work, he aims rather at indicating their spirit than narrating particulars. He also continues to take a general view of the progress of the people as well as of their political aspirations and opinions as indicated in the assembled Tiers Etat. Health and circumstances have as yet prevented the completion of the work to the last great meeting in 1789. M. Thierry, however, reviews the governments of Richelieu and Mazarin, and the reign and character of Louis the Fourteenth, in reference to their effect upon the people less the nobility and clergy; his review terminating with the death of Louis.

The purpose of the work, perhaps necessarily, renders it rather disquisitional than narrative, dealing more frequently with deductions than facts. This makes the book of necessity dryer than where a striking narrative introduces pictures of the people, their manners and opinions. Sometimes the conclusion affirmed in the text is illustrated in a note by the living circumstances on which it is founded. At times the author displays a very remarkable power of generalization; a single sentence condenses a principle, or presents by a touch the characteristics of the age. There are occasions when narrative supersedes exposition. But upon the whole the book has a deductive air.

M. Thierry appears to have a theory not derived from a perusal of the documents he has edited, but entertained before he began his task. In words it may be a grand and glorious idea; in reality it is a notion favourable to arbitrary power, and always capable of being perverted to its purposes. In some form the notion has long existed. The ancient republics had it in the absolute power they conceived the state to possess. Hobbes produced it in an offensive way. In Turkey and other Mahometan countries it is found in practical vigour; in France it now appears in full development. M. Thierry's idea, as we understand him, is this. In society there is only the people and the ruler, who is in fact a sort of focus of the people. Nobles and any other orders with power and privileges are at best an obstruction, and will most probably become a corrupt evil. National unity, liberty, and equality in the people, power (and to be effective it must be absolute power) in the ruler, seem to be his beau idéal of a nation. He admires the vigour of Louis the Fourteenth, and complains not of his arbitrary rule, but of his mischievous wars and intolerance. He admires the results of 1789; which must point to the Empire. He thinks France has now advanced to a still more favourable point; but the now would rather seem to refer to Louis Philippe than to Louis Napoleon. The object of Augustin Thierry is to trace "the formation and progress of the Tiers Etat" till it swallowed up everything else except its masters, from the earliest period of history until his survey closes, and to impress upon the mind of the reader that this is the mission or destiny of France. In some conjunctures of affairs despotism may certainly be a necessity. Well-administered, it may be an advantage to some peoples, until they happen to cross it. In the management of diplomacy and war it mostly has a superiority. A nation where all are free, equal, and happy, and where government is reduced to the utmost directness, is a fine abstraction. We live, however, in a world where there is nothing in nature ideal and abstract—not even, according to Cousin, a mathematical figure.

The most interesting account of the States General is the meeting of 1614. The materials are probably fuller than for the earlier assemblies. The period comes home to modern ideas; for the same movement that was agitating France, was moving in England to finally produce the Great Rebellion. There is life in the speeches, vigour in the contest; for the Tiers Etat began to assert rights and powers more directly than formerly. If France was "destined" to 1789, there is an end of the matter; but it does seem that if the nobility had abated its pretences and its arrogance, joined with the clergy to advance practical measures and reforms, and all three estates had combined to obtain some power of check, there was a good prospect of constitutional government for France. But the contempt of noblesse for roturiers, to be revenged so dreadfully nearly two centuries afterwards, came into play, and destroyed the chance. To a financial measure introduced under Henry the Fourth M. Thierry ascribes greater social effects than it would seem to possess; but it is necessary to understand it, as it was a ground of contention.

"Among the fiscal measures which were suggested to the Government of Henry IV. by an imperious necessity, is one which, both at the time and subsequently, produced serious consequences—I mean the annual payment imposed on all the officers of the judicature and exchequer, and commonly called the paulette. By means of this tax, the magistrates of the supreme courts, and the royal officers of every rank, enjoyed the possession of their places

as hereditary property. The first result of this innovation was to raise the saleable value of the offices to an amount unknown till then; the second was to invest the civil functionaries with a new degree of consideration, that which is attached to advantages of an hereditary nature. Within less than ten years the passions and interests of classes were awakened and brought into collision by the effects of this simple financial expedient. The nobles—many of whom were poor, and many trammelled with entails—were deprived of all chance of these offices by their high price; and this took place at the very moment when, becoming more enlightened, they understood the error which their ancestors had committed in excluding themselves from these offices through their aversion to study, and in abandoning them to the Tiers Etat. Thence new causes of jealousy and rivalry arose between these two orders: the one was irritated at seeing the other aggrandized in an unexpected manner by the appointments which it now felt regret at having formerly despised; the other, from the hereditary right which raised professional families to the level of military, began to imbibe the spirit of independence and pride, and the high opinion of self, which were before the attributes of those of noble birth."

This paulette the nobles desired to suspend. The Tiers Etat consented, but proposed at the same time to discontinue the pensions (of the nobility) and to reduce the taxes generally. They mixed the three questions together, and refused to separate them. One of their speakers, Jean Savaron, Lieutenant-General of the Sénéchaussée of Auvergne, expressed himself freely in the assembly of his own order, and afterwards as its prolocutor before the nobility.

"Before the nobles, Savaron expressed himself in a loud and proud tone, and his arguments were marked with irony and menace. He said that it was not the annual payment which closed the approach to office to those of noble birth, but their want of aptitude for them, and the venality of the appointments; that, moreover, the suspension of the paulette, the taxes, and the suppression of pensions could not be separated; that the abuse of pensions was become such that the King no longer found servants except by making pensioners of them—a state of things which was tending to ruin the treasury, to oppress and crush the people; and he added, in conclusion, 'Resume, gentlemen, the virtues of your predecessors, and the ways to honour and appointments will be open to you. History informs us that the Romans imposed such burdens upon the French, that they at last shook off their obedience, and by so doing laid the first foundations of the monarchy. The people are now so burdened with taxes, that it is to be feared that a similar event may take place. God grant that I may be a false prophet!'"

The nobles only replied with murmurs and invectives to the prolocutor of the Tiers Etat.

In a subsequent address to the King, Savaron gave still greater offence to the nobility, and they determined to address the Crown.

"They begged the clergy to join them in this proceeding: but that body, assuming the character of a mediator, sent one of its members to the assembly of the Tiers Etat to lay before it the grievances of the nobles, and to invite it to give some satisfaction for the sake of peace. When the deputy had spoken, Savaron rose and said proudly, that neither in deed, intention, nor word had he given offence to the nobles; that as for the rest, before he served the King as an officer of justice, he had borne arms; so that he was able to give an answer to any one in the one character or the other. In order to avoid a rupture, which would have rendered all business in the States impossible, the Tiers Etat accepted the mediation which was offered them, and consented to send a conciliatory message to the nobles; and in order that all cause of dissatisfaction and distrust should be removed, they chose a new speaker, the Lieutenant Civil, De Mesmes. De Mesmes was commissioned to declare that neither the Tiers Etat in general nor any of its members in particular had any design of giving offence to the order of the nobles. He made use of language at once honest and plausible; but the ground was so hot, that, instead of appeasing the quarrel, his speech embittered it. He said that the three orders were three brothers, children of their common mother, France; that the clergy represented the eldest, the nobles the second, and the Tiers Etat the youngest; that the Tiers Etat had always recognized the nobles as raised in some degree above it, but that the nobles ought also to recognize the Tiers Etat as their brother, and not to despise it, as if it were of no account; that it was often found in domestic life that the eldest sons ruined the family, and that the youngest restored it. It was not only these last words, but the comparison of the three orders to three brothers, and the notion of such a relationship between the Tiers Etat and the nobles, that excited a storm of dissatisfaction among the latter. Their assembly, in confusion, directed their reproaches against the ecclesiastical representatives who were present at the sitting, complaining that the messenger of the Tiers Etat, introduced at their instance, instead of making reparation, had offered fresh injuries more serious than the first. After some lengthy discussion upon what ought to be done, it was resolved that they should proceed forthwith with a complaint to the King.

"The audience which was demanded was not obtained till two days after; the nobles attended in a body. Their prolocutor, the Baron de Senecy, concluded a verbose exordium with this description of the Tiers Etat:—'An order composed of people from the cities and the country; the last almost all bound to do homage, and under the jurisdiction of the two first orders; those of the cities, bourgeois, tradesmen, artisans, and some plebeians; and,' he continued, 'these are the persons, who, forgetting their position, without the sanction of those whom they represent, wish to compare themselves to us. I am ashamed, Sir, to repeat to you the terms which have given us fresh offence. They compare your state to a family composed of three brothers; they say that the ecclesiastical order is the eldest, ours the second, and theirs the youngest; and that it often happens that houses ruined by the eldest are raised up again by the youngest. Into what a pitiable condition are we fallen, if this be true! . . . And not content with calling us brothers, they attribute the restoration of the state to themselves, in which, as France knows sufficiently, they have no share whatever; so everybody perceives that they could not be in any way compared with us, and a presumption on such poor grounds would be intolerable. Pressence judgment, Sir, upon it, and, by a just decision, make them return to their duty.' As they retired, the assembly of the nobles who accompanied their speaker expressed their unanimous assent by gestures and such words as these: 'We do not choose that the sons of shoemakers and cobblers shall call us brothers; there is as much difference between us and them as between the master and the valet.'

The Tiers Etat received the news of this audience and of these remarks with great composure: they decided that their order should not only be approved, but thanked; that no revivification against the nobles should be made before the King; and that they should proceed to the business of the cahiers without pausing to notice such squabbles."

The history is embraced in the first volume. A second volume contains a variety of appended matter. There is a learned and interesting description of ancient municipal France, with an equally learned account of the communal constitution of Amiens; both throwing light upon the principal disquisition. There are also some original documents of an illustrative kind.

MAJOR CUNNINGHAM'S BHILSA TOPES.*

BHILSA is a city of Central India, lying in 23½° North latitude, 78° East longitude. The "Tope" is a building peculiar to the Buddhist religion; and great numbers of such buildings are found in the districts round Bhilsa: extensive ruins at the same time intimate the former importance of the region in a political and social as well as an ecclesiastical point of view. These Topes were opened, minutely examined, and are as minutely described, by Major Cunningham; the more striking buildings, their sites, and their contents, are exhibited to the eye by maps, plans, and drawings. Hence the title of the volume, *The Bhilsa Topes*.

Major Cunningham is of opinion that the Topes and discoveries connected with them show a relation between the British Druids and the Indian Buddhists, and that the Druidical remains are akin to the Topes. That ancient forms of civilization carried to the highest point in India and Egypt—exhibited, perhaps imitatively, in Italy and on the banks of the Tigris and Euphrates, and found in some form or other in many countries of the old world and even of America—had a common origin, is possible. That the innermost chamber or cell of the tope has some resemblance to the cromlech may be true; but that does not establish identity. A similar resemblance might be traced in the Pyramids. In fact, chambers with straight sides and a flat roof must have a generic resemblance, though size, materials, and workmanship may cause great apparent differences. On the whole, we should rather class the Topes with the Pyramids than with the Druidical erections. No doubt, the differences are great. The Pyramids are uniform in figure; the Topes vary somewhat according to their age, but the dome or bee-hive form is conspicuous. The Pyramids stand alone. The Topes sometimes have ornamental columns standing by them. But there appears this sign of a common origin—they originated in a religious or superstitious idea; they were erected to gratify individual pride; and though not absolutely useless, their utility was of a limited nature and utterly disproportioned to their cost. The temples of classical antiquity, and the Christian church, though best adapted to the objects they were built for, are capable of other adaptations. The use of a tope or a pyramid is very slight indeed.

Besides a full account of the character, inscriptions, and contents of the Bhilsa Topes, with incidental information in reference to the subject, Major Cunningham's book contains historical notices of Buddhism. Like the architectural or archaeological portion of the volume, the interest of these notices is limited: the author adopting too particular or antiquarian a mode of treatment. The history of Buddhism itself is one of great importance, not merely as an exposition of a religious belief still entertained by so many millions, and to some extent reappearing in modern Europe in one of its forms—Pantheism—but for its points of resemblance to Christianity. The true godship of Buddhism does not indeed appear to justify the importance that has been attached to it; for it seems to have been as much a philosophical as a religious idea. Buddha was spirit, or divine intelligence; Dharma was matter, or concrete nature; and Sangha, the union of the two, the universe. The religious ideas are more striking and important. Independently of the purer morality of Buddhism, the founder proclaimed, in the sixth century before Christ, the great Christian principle of the religious equality of all men. How he came by this doctrine is a mystery: his life and character are enveloped in fable; and if we had a truer biography we could hardly trace the origin of such an idea. The doctrine was suited to the spiritual necessities of civilised India; for on one side Brahminism had reduced religion to the narrowest and most odious formalism of caste—on the other had arisen a system of Atheistic fatalism, not greatly differing from one of the Chinese sects of opinion. The dull and formal, and that large portion who travel along the ruts of life, stuck to the doctrines of the Brahmins; the more speculative and sceptical became Swastikas: earnest and thoughtful minds were repelled from the deadness of the Brahmins, and deterred by the endless difficulties attached to final happiness under the transmigrating system; they were shocked at the indifference of the philosophers and the annihilation they looked forward to. As the Pagan world six hundred years later was prompt to receive Christianity as a refuge from social corruption and intellectual emptiness, so the Indian mind was prepared for some more vital and catholic system than they had before them. Something like Buddhism was wanted.

"Between the Swastikas, who promised nothing after this life, and the Brahmins, who offered an almost endless series of mortal existences, people of strong minds and deep thoughts must have been sadly perplexed. Few men of vigorous intellect could have believed that their never-sleeping souls were subject to decay and dissolution; and yet how few of them, by the most zealous asceticism, could reasonably expect the final attainment of incorporation with the Divinity. For the mass of mankind there could have been no hope whatever; for few would attempt the attainment of that which was so difficult as to be almost impossible."

"During the prevalence of such beliefs the success of any more rational system was certain; and the triumphant career of Sakyas Muni, and the rapid propagation of his religion, may be attributed as much to the defects of former systems as to the practical character of his own precepts, which inculcated morality, charity, abstinence, and the more speedy attainment of Buddhahood, with the abolition of caste, and the hereditary priesthood."

The volume contains a broad and vigorous sketch of the leading characteristics of these various religions, as they were more than two thousand years ago, as well as a fuller account of the origin of Buddhism, its extensive and rapid progress, the various sects into

which it subsequently divided, and its subsequent decline. From the history of Buddhism not being the main object of Major Cunningham, and from his consequently treating it somewhat with reference to other matters, the narrative is less popular than it might be made if the subject were not unduly pursued into detail. The comparative decline of the doctrine, after flourishing for more than a thousand years, was owing to the same causes which formed its original success—the encouragement of narrow formalism, and undue demands upon the human nature of its votaries. It is curious that these repulsive circumstances took the same shape in Buddhism as in a religion to which it has often been compared. Romanism and Buddhism were so far contemporaneous, that while monachism and asceticism were rising to power in Europe, they were declining in India.

"The fall of Buddhism was a natural consequence of closing all roads to salvation, save the difficult path which led from one grade to another of the monastic orders. No layman could hope to be saved; and even the most zealous votary must have felt that the standard of excellence was too lofty to be reached. Absolute faith, perfect virtue, and supreme knowledge, were indispensable; and without these no man could attain Buddhahood and final freedom from transmigration. Continued celibacy, abstinence, and privation, were expected from all who had taken the vows; and a long course of prayer, penance, and devout abstraction, were requisite before the votary could gain the rank of Arhata or Bodhisatva. But as this was the only path to salvation, people of all ranks flocked to the monasteries; men crossed by fortune or disappointed in ambition, wives neglected by their husbands and widows by their children, the wretched debarred and the zealous enthusiast, all took the vows of celibacy, abstinence, and poverty. In the early ages of Buddhism, the votaries supported themselves by daily begging; but the pious generosity of individuals had gradually alienated the finest lands in the country for the support of the monasteries; and the mass of the people looked with envy upon the possessions of an idle multitude of monks. The rich domains of the monasteries attracted the notice of kings, and the desire of possession was soon followed by its accomplishment. The people looked on unmoved, and would not defend what they had long ceased to respect; and the colossal figure of Buddhism, which had once bedazzled the whole continent of India, vanished suddenly like a rainbow at sunset."

GALTON'S ART OF TRAVEL.*

ANOTHER proof of the aptitude of the age for enterprise and locomotion. *The Art of Travel* is not a guide to conveyances, hotels, sights, and so forth: it is not even instructions how to manage in a country where the wayfarer may have to put up with a hovel in the absence of a wayside "public." Mr. Galton undertakes not to qualify any one under a Nimrod of the prairies of America, the sandy plains of Southern Africa, or the jungles of the East. The full use of the book, however, is for the explorer. The art taught is the art of being independent of civilization. Mr. Galton supposes his complete disciple to throw himself into the howling wilderness, the rarely trodden waste, or the primeval forests, to explore such parts of the globe as remain unexplored. There a man must be all in all to himself, and look after his followers and animals as well. He must maintain discipline, he must supply food, he must find water or perish. He must be his own carpenter, carrier, tailor, shoemaker, medicine-man, soap and candle maker, and must exercise all the arts that characterize the "odd man" of a new colony or a very remote place in an old but backward country. The explorer must be his own policeman, possibly his own magistrate, judge, and jury. He must practise the arts of war as well as the arts of peace. He may be attacked en route by hostile savages: a few may steal upon him at night; he may have to "take up a position," and, like a Roman legion on its march, fortify his camp. He must be his own engineer, crossing rivers, swamps, and other obstacles, as best he may—in short, exhibit a "head" capable of managing matters before Sebastopol, and indeed Sebastopol itself.

Such is the "homo ad unguem" that Mr. Galton's book aims at forming. It may be an ideal hard to realize; but moralists and critics tell us that the man or the artist always falls short of the proposed exemplar. There are also some directions, that it would scarcely fall within the compass of one traveller to be called upon to execute—perhaps of any; but "store is no store." Who that commits himself to wildness in every form of man, beast, vegetable life, and physical geography, can tell what he may have to do?

The book is curious, and not without interest. The form is that of direction or recipe, but the instructions often contain pictures of manners, landscapes, and the arts and stratagems to which man has recourse on the pinch of necessity. The pith of travel and of traveller's experience is in the little volume; mixed, no doubt, with matter of a drier kind. There are also traits of animal instinct. "Go, from the creatures thy instructions take," not only in the arts of which the poet speaks, but in the humbler matter of making your bed.

"Study the form of a hare. In the flattest and most unpromising of fields, the creature will have availed herself of some little hollow to the lee of an insignificant tuft of grass, and there she will have nestled and edged about till she has made a smooth, round, grassy bed, compact and fitted to her shape, where she may curl herself snugly up, and cower down below the level of the cutting night wind. Follow her example: a man, as he lies down upon his mother earth, is but a small low object, and a screen of eighteen inches high will guard him securely from the strength of a storm. The great mistake of a novice lies in selecting a tree for his camping-place, which spreads out nobly above but affords nothing but a bare stem below. It may be that as he walks about in search of a bush, the quantity of foliage at the level of his eye, with its broad shadow, chiefly attracts him, and as he stands to the leeward of it, it seems snug; and therefore, without further reflection, he orders his bed to be spread at its foot. But as soon as he lies down on the ground, the tree proves worthless as a screen—it is a roof and not a wall: what is really wanted is a dense low screen, perfectly wind-

* *The Bhilsa Topes*; or *Buddhist Monuments of Central India*: comprising a brief historical sketch of the Rise, Progress, and Decline of Buddhism; with an Account of the Opening and Examination of the various groups of Topes around Bhilsa. By Major-General Cunningham, Bengal Engineers. Illustrated with thirty-three Plates. Published by Smith and Elder.

* *The Art of Travel*; or *Shifts and Contrivances available in Wild Countries*. By Francis Galton, Author of "Explorations in Tropical South Africa." With Woodcuts. Published by Murray.

tight, as high up as the knee above the ground. All additional defence is superfluous to a sleeping man. Thus, if a traveller has to encamp on a bare turf plain, he need only turn up a broad sod seven feet long by two feet wide, and if he succeeds in propping it up on its edge it will form a sufficient shield against the wind."

There is nothing like travel for begetting toleration for other people's customs; not always from mere habit, but because we learn the reason of the custom,—as, for example, the warmth of dirt.

"There is no denying the fact, though it be not agreeable to confess it, that dirt and grease are great protectors of the skin against inclement weather, and that therefore the leader of a party should not be too exacting about the appearance of his less warily clad followers. Daily washing, if not followed by oiling, must be compensated for by wearing clothes. Take the instance of a dog. He will sleep out under any bush, and thrive there, so long as he is not washed, groomed, and kept clean; but if he be, he must have a kennel to lie in. A savage will never wash unless he can grease himself afterwards—grease takes the place of clothing to him. I mentioned previously a Swedish proverb; it would be very true if varied thus, 'Grease and dirt are the savage's wearing apparel!' There must be a balance between the activity of the skin and the calls upon it; and where exposure is greater so must the pores be more defended. This is a strangely artificial state that we live in in Europe, where our whole body is swathed up in many folds of dress, excepting the hands and face, the first of which are frequently gloved. We can afford to wash, but naked men cannot."

This account of the human odour is not complimentary to man in general; unless we take the fact as a compliment to civilization. Domestic, that is civilized animals, are not, shall we say it, disgusted with the taint of man: they know better.

"Our own senses do not make us aware of what is disagreeable enough to confess—that the whole species of mankind yields a powerful and widespread emanation that is utterly disgusting and repulsive to every animal in its wild state. It requires some experience to realize this fact: a man must frequently have watched the heads of a herd of far-distant animals tossed up in alarm the moment that they catch his wind. He must have observed the tracks of animals—how, when they crossed his own of the preceding day, the beast that made them has stopped, scrutinized, and shunned it—before he can believe what a Yahoo he is among the brute creation. No cleanliness of the individual seems to diminish this remarkable odour; indeed, the more civilized the man the more subtle does it appear to be—the touch of a gamekeeper scarce less than that of the master, and the touch of a Negro or Bushman less than that of a traveller from Europe."

The book of travels by which Mr. Galton is known to the world is the interesting *Explorations in Tropical South Africa*, and his own experience seems limited to dry countries or to America. This volume, however, is not altogether the result of his own observation; he has drawn freely on the experience of others when he thinks their remarks of use to the explorer.

NEW POETICAL PUBLICATIONS.*

THE subjects of Martin Farquhar Tupper's *Lyrics of the Heart and Mind* are mostly of a moral character, though the phases of morality they embrace are various,—religious, domestic, social, political, and, in compliance with the spirit of the time, warlike. They are genial in feeling, pure in thought, without being impracticable, progressive in sentiment, and occasionally with just ideas happily expressed. The poetry is not of a high order, but it is poetry, not only in the spirit but in the structure and treatment. It is a fault of the verse to be too facile, too glib. Except in his sonnets, whose very form compels consideration, Mr. Tupper seems to have avoided labour. He has chosen the easiest and most tripping metre, without any care as to its suitability to the subject. He appears, not from warmth but from love of ease, to have "forgotten his notions as they fell"; so that the best of his poems are unequal, good stanzas being accompanied by commonplace. Sometimes the truths smack too much of a truism put into a verse; now and then the pieces verge too closely upon a once favourite volume, "Easy Poems for Infant Minds." Many of the lyrics look like recreations rather than exertions. Throughout they have a "fatal facility"; such things, in fact, as any one could throw off who had a certain fluency of thought and had acquired by practice the knack of versifying. This defect, however, does not militate against the readability or the popularity of the *Lyrics*; nay, they are likely to be popular on account of it.

One of the newest subjects is the lyric on cruelty to dumb animals; the newest in treatment certainly, for the poet enforces the idea of another and compensating life to animals.

"Lo! Surgery's philosophic knife,
Too merciless to kill,
Dissecting out the strings of life
With calm and horrid skill,—
And bloody goods, and weeping whips,
And many a torture fell,
Have wrung from every creature's lips
That earth to them is hell!
Yea: dream not that the good and wise
To these can be unjust;
Nor, if not claimants for the skies,
That all dissolve to dust:
They have a spirit which survives
This cauldron of unrest,
And here though wretched in their lives,
Elsewhere they shall be blest!
In the just government and strong
Of such a God as ours,
Only for wickedness and wrong
Perpetual judgment hours:

* *Lyrics of the Heart and Mind*. By Martin F. Tupper, Author of "Proverbial Philosophy," &c. Published by Hall and Co.

Ex Krems. Poems chiefly written in India. By H. G. Keene. Published by Blackwood and Sons.

Cain. By Charles Reyer. Published by Chapman and Hall.

War Wails. By Gerald Massey. Published by Rogers.

The Battle of the Alma; a National Ballad. By John William Fletcher, Author of "Thryssa and other Poems," &c. Published by Trenchard.

The Eagle of the Black Sea. By Melancton. Published by Hardwicke.

No creature ever ran a race
Of griefs not earned before,
Without some compensating grace
Of happiness in store!"

There is a useful truth, though it might have been improved by more forcible expression, in these lines from a poem on individuality.

"Measure not thyself with others,—
Heed the work thou hast to do;
Each man's duty, not his brother's,
Is his goal to keep in view:
Nature, circumstance, and station,
With what God from each exacts
As his tribute to Creation,
These decide our aims and acts.
Every creature, fitly fashioned,
Hath its being's final cause;
And our minds and hearts impation'd
Beast with individual laws:
All are various; differing measures
Fill us each with power to work,
And the spirit's special treasures
Latent in each bosom lurk."

This is a truth of a critical kind—that the effect of speech or writing lies not in its language, but its sentiments and object.

"Who can wonder that in vain
Scores of dillards preach for years,
Lulling conscience to its bane
Fast asleep in hopes and fears?
All is death: each fossil thought
Word-embedded lies in clay,
And no heart is touch'd or taught
To feel, to tremble, or to pray.
It is not eloquence, nor skill,
Nor any human power or art,
That surely sways another's will,
Controls his life and cheers his heart:
It is the frank and earnest plan
Of simple truth, sincerely spoken,
That breaks the spirit of a man,
Or heals it up however broken!"

Ex Erema. The charge of obvious love of ease cannot be preferred against Mr. Keene, for his poems are rarely of the kind which can be thrown off trippingly. What he wants are better subjects and more freshness of style. Many of the poems were written in India; some being tales connected with the land, and borrowing their images from the people and the scenes among which they are laid. The feelings of the exile are often visible in the miscellaneous pieces written on occasional subjects. The smaller poems generally want purpose or novelty; the longer are damaged by the subject itself, or some defect in the treatment. The style is too imitatively conventional, not exactly Byron's, but what many followers have made Byronic at second-hand. Mr. Keene seems to have a taste for the extreme or exaggerated, as if he had studied life in the pages of the *Diary of a Physician*, where the originally natural is turned into the unnatural by a morbid hunkering after rhetorical or theatrical effect. Perhaps the best-told tale is the "Zenana," though it may not be the most telling,—the story of an Indian lady, who, compelled to surrender to the conqueror of her husband, receives him a corpse—if the expression may be allowed. The most effective tale is "Michael de Mas, the Gold-finder"; which has already appeared in *Blackwood*. It mingles home scenes with the wild chances and wilder passions of an Indian adventurer, bent upon acquiring gold to repurchase the family estate and restore the family honours. It also points the moral of over eagerness for gold. The piece, however, is without repose; for there seems none in the mind of the author. All is upon the strain—"double, double, toil and trouble." The moral is vitiated in the same way. No one requires to have it proved, that an Anglo-Indian of the old stamp, who acquires wealth by extortion, is a traitor to the power he serves, and, when detected by his countrymen, takes service with a native prince whom he also strives to betray out of revenge, is not likely to be happy, especially when personal excesses are added to crimes of office. There is one passage removed from this censure; where the excuse and use of the old Nabobs is pointed out.

"Ten years had shed their various gifts on earth
Of death and life, of sunshine and of shade;
Michael had gained his end, and India's sun
Now ruled his eager blood: some of his hopes
Were crown'd with triumph; he got store of gold,
But lost his sense of honour.

In days like those,
Deceit and violence gave the rule of life
To men once wise and generous. They were poor,
And they had power: opinion, far away,
Raved like the idle murmur of the sea,
Heard in still summer evenings from a hill.
Blame them not over harshly: skill and valour
Give power, which, even when marred and mixed with wrong,
May bless those who abide its visitings.
When autumn nights are moonless, and thick clouds
Have hid the friendly faces of the stars,
The storm may bring keen lightnings: here and there
Some wretch, whose hour was come, may gain by them
Immunity from other lingering deaths,
And that may seem an evil; yet the air,
Purged by those very bolts, grows sweet and clear,
And feeds the corn, the oil, the parch'd vine,
And gives to men, for many and many a day,
Prosperity and pleasure. So with these,
God's chosen messengers to work His will;
They purify the poisoned moral gale,
Cause peace and plenty wheresoe'er they go,
And lead in happiness on a path of thorns."



Cain. Mr. Borer is a good chamois-hunter, and a good describer of that sport, as well as of the scenery among which the mountain-hunter ranges. His present volume shows that he is not altogether deficient in the faculty of poetry or the power of presenting his thoughts in verse. But he is not equal to "Cain." Divines succeed better with that character than poets. The clergyman is moral, the versifier metaphysical. The sermon paints Cain as a hard and envious man, with a touch of the defiant "scorn," and possessed with the pride and self-righteousness of the Pharisee—a man who cannot bear even a supernatural slight. In short, the type, as Mr. Frederick Maurice puts it, of that large class of men who harden their hearts in religious things, and would drive a bargain with their sacrifices. In the modern dramatic poem, the first murderer appears in the character of a troubled speculator. He is a mazed metaphysician, puzzled, like Confucius, by much that he sees, and by more that he cannot see; which last the Chinese sage had the resolution to dismiss from his thoughts.

There is something too much of this in the earlier part of Mr. Borer's *Cain*; in fact, from the continual "voices" of which the dramatic persona complains, he would seem to be not altogether right in his mind; in the latter part the author changes the Scriptural narrative altogether. The death does not ensue from the preference in the sacrifices; for Cain does not wish to sacrifice at all on that day, and when Abel tries to carry him off, a struggle ensues, and Abel is killed less by murder than chance-medley. After the death, Cain is remorseful; troubled for the deed, for himself, for his father, for his mother, without any of the obstinate and insolent spirit that spoke in "Am I my brother's keeper?"

Besides the three volumes on general themes, there are three poetical publications expressly devoted to the war. Mr. Gerald Massey, in a prefatory note, terms his *War Waits* "rough and ready war rhymes," scarcely to be "looked upon as poetic fruit maturely ripened, but rather as windfalls shook down in this wild blast of war." This remark hits their character not uncritically. They exhibit fire and patriotic feeling, with a good deal of vigorous fluency and force; but in the "torrent, tempest, and as we may say whirlwind of his passion," Mr. Massey has omitted to "acquire and beget a temperance that may give it smoothness." It follows that the *War Waits* are somewhat deficient in concentrated thought, as well as in felicitous force of expression. The theme is one that justifies haste and excuses want of finish; but Gerald Massey will not do himself justice if he continues to throw off verses on the spur of the occasion.

The Battle of the Alma, "a National Ballad," is not poetry of a high kind, and at times the author almost sinks into a prosaic minuteness of description akin to doggerel. The piece, however, tells the story of the fight with something of the picturesque straightforwardness of the old narrative ballad, touched, as might be expected, with the conventional poetic sound of the day. This description of the French scaling the heights on the left is not unwise.

"The sun had passed the zenith,
But was broad and burning still,
When the Zouaves and the Tirailleurs
Began to breast the hill.
Sure-footed as the chamois,
Impetuous as a flock
Of wild goats bounding lightly
From jutting rock to rock;
Now climbing and now leaping,
Clinging with hands and feet
To the first trailing creeper
Their gallant grasp may meet:
Still onward and still upward,
With souls that never flag,
Passing a moment now and then,
Like an eagle on a crag;
Still onward and still upward,
With hearts that never fail,
Where the boldest eye, with cooler blood,
And the strongest nerve, would quail."

A few of the poems in *The Bugle of the Black Sea* have appeared in the volume of verses entitled *Egmontia*. The new pieces relate to the events of the war, or to themes springing directly from it. The volume shows some poetical feeling and a facility of versifying; but this facility carries the writer too far. He wants strength and imagination. His subjects are too often little more than a paraphrase of the newspaper correspondence.

PUBLICATIONS RECEIVED.

BOOKS.

Memoirs of the Life and Writings of James Montgomery; including Selections from his Correspondence, Remains in Prose and Verse, and Conversations on various subjects. By John Heiland and James Everett.

Memoirs of Anne, Duchess of Brittany, twice Queen of France. By Louis Stuart Costello, Author of "Memoirs of Mary, Duchess of Burgundy," &c.

Grants, &c., from the Crown during the Reign of Edward the Fifth, from the original Docket-Book, MS. Harl. 433. And two Speeches for opening Parliament, by John Russell, Bishop of Lincoln, Lord Chancellor. With an Historical Introduction by John Gough Nichols, F.S.A., Lond. and New.

The Art of Travel; or Shifts and Contrivances available in Wild Countries. By Francis Galton, Author of "Explorations in Tropical South Africa." With Woodcuts.

War Waits. By Gerald Massey.

The Battle of the Alma; a National Ballad. By John William Fletcher, Author of "Tryphena, and other Poems," &c.

The Bugle of the Black Sea; or the British in the East. By Melancton.

The Christian Life, Social and Individual. By Peter Bayne, M.A. [An avowed object of this volume is to prove that Evangelical Christianity is not inconsistent with the highest intellectual characterisation, and to illustrate that theory by biographical sketches. The idea is not very rigidly adhered to, save in so far as the subjects of the lives may be called Evangelicals. The more definite purpose of the author would seem to be the confutation of German Rationalism of the Pantheistic school, and, though in a less degree, the philosophic Atheism which he says obtains at present. The disquisitional parts are chiefly confined to these topics, but they also mingle in the lives. These are six in number—Howard, Wilberforce, Bagehot, the Reformed trader, Foster, Arnold, and Chalmers. The book exhibits a good deal of power, but tainted with dogmatic self-sufficiency. It is also crude, apparently from the leading principles not being steadily adhered to; which gives it the appearance of desultory "articles" rather than of an homogeneous work. Mr. Bayne is a literary disciple of Carlyle, but strongly opposed to his philosophical and religious ideas. His continual opposition to these last gives *The Christian Life* too much the character of an Anti-Carlyle controversy.]

The Pathology of Drunkenness; a View of the Operation of Ardent Spirits in the production of Disease; founded on original observation and research. By Charles Wilson, M.D.

[In a medical sense there is a good deal more than pathology in Dr. Charles Wilson's volume. He touches upon the habits which lead to intemperance; describes the gradual progress of the spirit-drinker, and the bodily sensations as well as the "symptoms" that accompany his vice till death in some form or other overtakes him. The strict pathology exhibits no exaggeration; perhaps there is no actual exaggeration in any part, for all the instances might be substantiated. Still there appears the exaggeration of tone, which gregarious moralists generally fall into, more especially on the subject of temperance. The facts may be true; but the peculiar is treated as if it were the general. There is a good deal of curious matter in *The Pathology of Drunkenness*; some of it as intellectually strong as the drama to which the Doctor is so hostile.]

Drumsticks and Bay-Leaves: Essays on the Homely and the Beautiful. By Shirley Hibbard, Author of "Summer Solids," &c.

[Miscellaneous papers on topics connected with vegetation and the country, but branching off into rustic practices, poetical fancies, or scientific observations. There is some actual information, and some direct description, which pleases and fills the mind by recalling the original. It cannot, however, be denied that Mr. Shirley Hibbard is too prone to substitute sentiments and personal likings for matter of a real and solid kind.]

Familiar Fables, in easy language suited to the juvenile mind. By Miss Corner. The illustrations by Alfred Crowquill and James Northcote, Esq.

The Little Play of Mother Goose. Edited by Miss Corner. [Of these two children's books, the "Familiar Fables," are a select edition of Keop, neatly got up, with illustrated cuts. The old translation has been revised by Miss Corner, to adapt it for children; but it would admit of further improvement in pithy simplicity. "Mother Goose" is another of the writer's fairy dramas for drawing-room performance. It is as clever but hardly so effective as the previous plays; the subject not admitting of much dramatic variety or stage business.]

Heroines of Charity: containing the Sisters of Viscomtes, Jeanne Bisot, Mademoiselle Le Gras, Madame de Miramion, Mrs. Seton, the Little Sisters of the Poor, &c. With a Preface by Aubrey De Varn, Esq. [Lives or rather notices of some French devotees who flourished in the seventeenth century, and of Mrs. Seton, an American lady, who founded a religious community at Baltimore. There is also an account of two charitable societies, one American and one French. It is a Remanist publication, though there is hardly any exterior indication to that effect. The literary character is not striking.]

The Moor of Venice. Cinthio's Tale and Shakspeare's Tragedy. By John Edward Taylor.

[An edition of Cinthio's tale, on the story of which Shakspeare founded Othello. Mr. Taylor the editor has added a critical preface of skill and power; he, however, ascribes fully as much merit to the original tale as it deserves.]

A Manual of Elementary Chemistry: being a Practical Class-Book. By Robert Mortimer Glover, M.D., F.R.S.E., Physician to the Royal Free Hospital, &c. Illustrated.

[A practical completeness of information and illustration is the principal characteristic of this volume; well fitting it for the object of the writer, a handbook for the student who is at the same time attending the instructions of a teacher.]

Grace Thoughts for the New Year; in four Sermons preached during the last three months of the Old Year, by John Hampden Gurney, M.A., Rector of St. Mary's, Marylebone.

[These four sermons are on the general duties of Christians, but pointed with a reference to the war, from the nature and incidents of which they draw illustration and enforcement.]

The principal reprint is a second edition of Mr. Sewall's "Sermons to Boys," preached to the pupils of St. Peter's College, Radley. We have no recollection of the appearance of the first edition; and the sermons are so admirably close to their subjects, so adapted to boys at a place of education like Radley,—which combines, we believe, a school for the middle or humble classes with the higher objects of a college,—that the book is hardly fitted for a miscellaneous secular journal like ours.

The other volumes nearly tell their own story. That indispensable work to the practitioner "The London and Provincial Medical Directory" appears with further improvements. "The Roving Englishman in Turkey," reprinted from *Household Words*, is a free and rather flippant satire upon our diplomatic service and other things, as well as a series of sketches of Turkey and the Turks. "Beth Hall" is an American reprint, with a preface by the "British publishers"; who have a much higher opinion of Fanny Fern's merits than we can entertain.

A Year's Sermons to Boys, preached in the Chapel of St. Peter's College, Radley. By William Sewall, B.D., Warden. Second edition.

The London and Provincial Medical Directory, 1855.

The Roving Englishman in Turkey. Sketches from Life. Reprinted from *Household Words*.

Beth Hall: a Domestic Tale of the Present Time. By Fanny Fern.

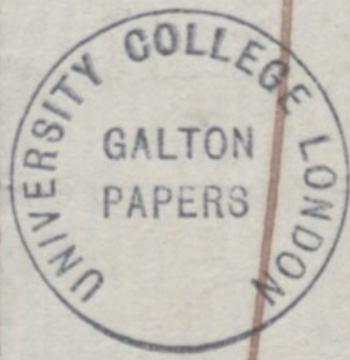
Blanche De Bourbon; a Poem. By W. H. Jones. Second edition.

Illustrations of the Law of Kindness. By the Reverend G. W. Montgomery. The fourth English edition, enlarged by a Memoir of the late Mrs. Elizabeth Fry, contributed by the late Joseph John Gurney; and Supplementary Chapter on Almsgiving, with Notes and Additions.

MAPS.

General Map of Europe; constructed from the best Authorities, and comprising the latest Additions and Rectifications. By Alexander Keith Johnston, F.R.S.E., &c., Geographer to the Queen.

[These are days for referring to a map of Europe "constructed from the best



FUEL AT THE CAMP.

TO THE EDITOR OF THE EVENING MAIL.

Sir,—It may not be too late for the following hints to be of service in the scarcity of fuel at the camp :—

Mr. Galton, the African explorer, in his *Art of Travel*, says, that "the bones of an animal even freshly killed make a remarkable substitute for firewood." In the Falkland Islands, where firewood is scarce, it is not unusual to cook part of the meat of a slaughtered bull with its own bones. When the fire is once started with a few sticks it burns hotly. The flame of course depends on the fat within the bones. During the Russian campaign in 1829, Moltke records that the troops suffered so severely from cold at Adrianople that the cemeteries were ransacked for bones for fuel. When there are so many hundreds of dead horses described as lying around the camp, they may be turned to some account in this way. The skins of the horses would also afford additional night covering, warmer than blankets, from the closer texture. The hides of the cattle that have been latterly arriving at Balaklava for the Commissariat are probably applied to the same purpose.

In the book of Mr. Galton, already referred to, are given directions for preparing skins, and many hints on food, fuel, shelter and other subjects, which might be turned to useful account in the camp. With bones, the manure of animals is burnt in all countries where fuel is scarce. The inconvenience from the smell of burning animal matter may be better borne, seeing that it may keep attention awake to the treacherous and fatal fumes of pure charcoal fires.

Feb. 5.

Your obedient servant,

J. M.

f.4v

feel that, with the impression which he conveyed to the mind of the late Prime Minister, and with the suppositions entertained by the other members of the Cabinet, his conduct, up to the 23d of January, was entirely in harmony. On the 20th of January, as well as on other occasions, questions of all kinds—questions relating to matters civil, matters legislative, matters Parliamentary—had been discussed in the Cabinet, and on none of those days did there appear the slightest symptom of the retention on the part of my noble friend behind me of his proposal or his wish that a change should take place in the person to whom the administration of the War Department was confided. My noble friend has referred to-night to a speech of the hon. member for Aylesbury (Mr. Layard), and to what, I think, he called the unsatisfactory position in which we stood with reference to the new campaign. It appears that my noble friend was of opinion that certain provisions should be made and certain measures adopted in preparation for the new campaign, none of which were taken. Well, Sir, my noble friend, I am quite sure, will acquit me and the rest of his colleagues of any responsibility in that matter. It was impossible, in deference to any opinion of his, that we could have made such preparations or taken such measures, for the simple reason that we had no knowledge whatever that he required such preparations to be made. ("Hear, hear," and a laugh.) My noble friend adverted again to a point which has been already mentioned—

whelming of the...
found. What can an honest
a system? The first feeling
should be for the men who would do better if
they might, and no mercy should be wasted on
the notoriously corrupt, who destroy the hopes
of a better order of things.

f.5rv

THE INTOLERANT EGYPTIAN.

The intolerance of the Egyptian must also be reckoned with. He and you must be the two millstones, one upper, one under. He cannot relish any parity of powers. He must rule or be ruled. He cannot understand "give and take"; he will screw to the utmost, no matter how rich; for on his wealth depends his power of protecting himself when authorities are against him. Another form of intolerance is his increasing discontent when he is better off; starved, as by his own rulers, he is submissive; well fed, he is insolent. Many races—perhaps most—are the same. But this must be understood by those who manage the Egyptian.

There are, unhappily, some modern movements which have stirred the fanaticism which might otherwise give way to more practicable emotions. The Senussi Party, rigidly exclusive in their theocracy in the western desert—and the Pan-Islamic Party, who naturally try to hold races together by their faith—neither of these leads the way to peace. A typical folly of this bitterness is the fate of a costly and beautiful photographic facsimile of the finest manuscript of the Quran, which was selected by the religious authorities themselves for reproduction; a large edition was printed for the Government schools, but no Moslem will use it because it was printed in a Christian country, and the whole edition is waste.

This feeling is the background on which we have traced our own embroidery of representative government utterly unsuited to it, and rendered impossible of effective working by the very material itself. It is a fatal mistake to give power before it is wanted; nothing but the training of a long struggle for it can enable any people to use it.

PANDERING TO THE NATIVES.

Not content with this incongruity, the attitude of assuming that the native is right and the European is wrong has upset the mental balance of the people. In a notorious case in Cairo a young British official was discharged though he was entirely in the right; only his own pertinacity gained a hearing for his case which led to his restitution. Justice—rigid justice—appeals powerfully to the Egyptian—it is so rare. But injustice in his favour is a fatal poison to him.

The education of young lawyers far in excess of the needs of the country has stimulated the litigiousness of the people, which is legally and illegally a fearful impoverishment to them; and it also has bred a class who must look to political agitation for their support.

Those who have lived in Egypt must thank a great politician for stating to the stay-at-homes what is common knowledge to those on the spot. Mr. Roosevelt has said not a whit

the rho-
B. T.

GENERAL FOR RICH MAN

For a simple funeral, containing little expense as is reasonable, is contained in the will of Mr. Brown, of 9, Chester-terrace, N.W., a member of Messrs. Addison, and Brown, solicitors. In similar request, it will be in the will of Mr. Thomas C.C.S., whose will was proved. Mr. Brown also wished that could be used at his funeral, as his wife may wish to place in.

Mr. Brown, who was sixty-five, left another partner in the same Joseph Addison, who died less than a month before Mr. Brown, left

MISS'S NEW OPERA.

Mr. Strauss's opera "Feuersnot" produced by the Beecham Opera Company next month at His Majesty's Theatre.

It should be a memorable one, and has not been heard here, and (adapted from the "Heptameron" quite remarkable for a grand opera. Concerning the cast has not yet been decided, but Mr. Beecham may be relied upon to furnish an adequate and also to produce the opera in a lavish style. We understand that the well-known musical composer, who is engaged in writing the English libretto.

OF BOY SCOUTS.

Mr. Powell's first report on the Boy Scouts states that the Advisory Council consists of Lord Roberts, Lord Rosebery, Lord Charles Beresford, Lord Esher, Lord Grey, Lord Strathcona, Lord Curzon, the Archbishop of Westminster, the Bishop of Ripon, the Rev. C. D. Clarke, M.P., and Sir Lauder

of Great Britain and Ireland the Boy Scouts has started in all the Dominions of the Empire, Ceylon, Wei Hai Wei, Tientsin, France, Sweden, Russia, the United States, and Chili, among other places. Medals for life-saving have been awarded.

Now wanted is an income of £100 per annum for the next three years and young men as scoutmasters.

BY THUNDERBOLT.

Of chimneys and the roof of a shop were wrecked and the ceilings, and furniture in three shops damaged by what is described as a thunderbolt during a storm in the district of Manchester yesterday.

One of the shops was also set on fire, a tram was put out of service, and some of the street lamped. Two men were injured, and an assistant in a shop was killed. The woman being

his brother
Hohler, and the re-
to his wife

Mr. JOHN PARKER, of Denmark Villas, Hove, Engineer, left £1,000 and to his housekeeper Lucy

Mr. JOSEPH COLEMAN (77) Bedfordshire, head of Messrs. Addams and Sons, of Ampleford, merchant and draper

Alderman GEORGE MORGAN, Summerhill-avenue, Newbury, builder and contractor

Mr. GEORGE FREDERICK MANCOTT, Hampshire, iron merchant at Lymington

The Rev. RICHARD LEA (92), of Leabrook, Watlington, formerly of Dame Tonbridge, Kent, and Uxbridge, Kent

Mrs. ANN COOPER, of 62a, Southport, widow of Mr. the Manchester Guardian, certain furniture to her son, if still in her service of her estate, about £5,000, fund to be known as the "J. Lea" fund for the benefit of needy ex-employees of the Manchester Guardian Ltd., and other necessaries connected with the fund

SALISBURY PL

Nine special reserve in manoeuvres on Salisbury Plain. They came from Dorset, Oxford, Berkshire, Cornwall, and Wiltshire. The Notts and Derby a brigade of R.F.A. "Blue" invading. General Sir H. Rawlinson's force were the Scots Greys and Munster Fusiliers with The "Red" Army crests of Haxton Down. Mile Ball. With a sounding of the charge, infantrymen made point of the bayonet within twenty yards, blowing of whistles, "done," shouted the Munsters, "a splendid." The operations then after marching past moved back to their Parkhouse.

HARTLEPOOL

Candidates: (M. L. maj. in January,

Mr. Howard Gribble Hartlepool to-night his supporters. If the open-air meeting will square. Already have been arranged June 10 Lord Ridley meeting. Among the Furness's meeting Francis Neilson, Lill Hyde division of Cheshire. Mr. Furness's refusal of Lords in his election favour of the Government signed to establish the of your chosen representatives due opportunities for consideration of revision." Mr. Gribble in the hands of the

THE SCIENCE OF BETTING. f.6r

Mr. Charles Dodgson, Mathematical Lecturer at Christ Church, Oxford, writes to the *Pall Mall Gazette* that the rule of betting may be stated thus:—

Write all the possible events in a column, placing opposite to each the odds offered against it; this will give two columns of figures. For the third column add together the odds in each case, and find the least common multiple of all the numbers in this column. For the fourth column divide this least common multiple by the several numbers in the third column. For the fifth and six columns multiply the original odds by the several numbers in the fourth column. These odds are to be given or taken, according as the sum total of the sixth column is greater or less than the least common multiple. The last two columns give the relative amounts to be invested in each bet:—

| | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------|---------|----|----|----|----|-------------|
| A .. | 2 to 3 | .. | 5 | .. | 12 | .. 24 to 36 |
| B .. | 4 to 1 | .. | 5 | .. | 12 | .. 48 to 12 |
| C .. | 5 to 1 | .. | 6 | .. | 10 | .. 50 to 10 |
| D .. | 9 to 1 | .. | 10 | .. | 6 | .. 54 to 6 |
| The Field | 14 to 1 | .. | 15 | .. | 4 | .. 56 to 4 |

An example will make this clear:—Suppose that in a race about to be run there are four horses in the betting, the odds being 3 to 2 on the favourite, which is equivalent to 2 to 3 against. The least common multiple of the third column is 60, and the sum total of the last 63, and as this is greater than 60, the odds in this case are all to be given in the relative amounts given in the fifth and six columns. Suppose, for example, that I multiply these columns by 10, and make the bets in pounds—that is, I take 360*l.* to 240*l.* on A, I give 480*l.* to 120*l.* against B, and so on. Now, suppose C to win the race; in the case I lose 500*l.*, and win 860*l.* plus 120*l.* plus 60*l.* plus 40*l.* equal 580*l.* It will be found on trial that I win the same sum, 80*l.*, in each of the five events. If all betting men tried to work this system, they would either be all offering odds or all taking odds on each event, and so no bets could be made. But the fact that this system of winning is ever possible arises from the odds being unevenly adjusted, so that they do not represent the real chances of the several events. Supposing this system to be applied only in cases where the odds were evenly adjusted, the sum total of the sixth column would always be equal to the least common multiple, and thus, whether the odds were given or taken, the concluding entry in every betting book would be "Gain = Loss = Nil"—a most desirable result.

Nov. 24, 1866.]

PALL MALL

historically, geographically, and psychologically by an intelligent inquirer, should you set apart certain seasons for their discussion. May I venture further to suggest it to the consideration of your correspondent who gave such an excellent prospectus of a new bureau d'indication for travellers on the Continent a short time ago as a useful addition to his plan, and to call his attention to a map which he might find helpful to him, if it is still to be procured, and which I remember to have seen in my childhood—the "Carte Gastronomique de la France"?—I am, dear Sir, very truly yours,

Toulouse, Nov. 20, 1866.

EUPHAGE.

THE SCIENCE OF BETTING.

To the EDITOR of the PALL MALL GAZETTE.

SIR,—It may be interesting to your readers to know that this subject was brought forward [and the principle published in the Senate House Problem proposed at Cambridge January 8, 1839. I remember when I was a freshman that it was considered by some to be likely to stimulate undergraduates to book-making; by others as a caution to them that those who professed book-making would probably only utilize their bets to their own ends. I append the problem.—Yours,

Nov. 21, 1866.

A.

The odds against m horses are n_1 to 1, n_2 to 1, ..., n_m to 1: show that, except in the particular case in which the sum of the reciprocals of $n_1 + 1, n_2 + 1, \dots, n_m + 1$ is unity a person may so arrange his bets as to win a given sum whichever horse be successful, and that he must bet against or back every horse according as the above sum is greater or less than unity. Taking the odds in the St. Leger (1838) against the horses annexed to them as follows:—7 to 4 Don John, 9 to 4 Ion, 9 to 2 Lanercost, 9 to 1 Saintfoin, 15 to 1 Cobham, 20 to 1 Alzira, 33 to 1 Hydra; arrange the bets, 1st—so as to win £378 10*s.* in any case; 2nd—so as to win £378 10*s.* if either Don John or Lanercost be first, otherwise to be even.

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November, 1871.—B.
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WALTON

November, 1871.—B.
for the said execution
THE Rev. H.
Warden, in the
Act of Parliament
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the ESTATE
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WALTON

SCHOOL OF PRACTICAL ENGINEERING.

Yesterday the prizes were distributed to the successful students of the Crystal Palace School of Practical Engineering, a most useful institution, which, since its foundation a few years ago, has done excellent work in preparing youths for mechanical engineers. Stimulated by the success they have achieved, the directors are about to add a section for civil engineering, including practical surveying, levelling, use of instruments, preparation of plans and estimates for public works, and what will meet a want that has been felt for years in this country—namely, a course of practical instruction for gentlemen who intend to proceed to the colonies or abroad, as explorers or settlers. The object proposed is to afford them so much practical knowledge of scientific and mechanical work and expedients as shall enable them best to utilize the means with which they may have to deal, especially when entirely dependent on their own resources. The course will be divided into three terms of fifteen weeks each, and the instruction is, as far as possible, practical in all details. Easter term will be devoted to Surveying and Levelling, including simple ways of measuring heights and distances—Drainage and Rainfall—Sounding and Gauging Rivers—Testing Flow of Water through Pipes—Damming Streams—Making Tanks, Reservoirs, and Filter Beds—Mechanical Powers—Moving Heavy Weights—Making Water Wheels and Turbines—Boring for Water—Tube and other Wells—Plans for Raising Water—Pump Making—Windmills—Ventilation—Sanitary Arrangements—Camp Making, Knots and Bends—Shifts and Expedients of Camp Life. The Summer Term: Growth of Wood—Modes of Clearing, Felling, Grubbing, &c.—Barking, Seasoning, Hand-sawing, Saw-mills and Machinery—Principles and Construction of Works in Timber—Calculation of Struts—Strength of Material—Rough Carpentry, Joining, Fencing, Cart-wheel Making—Glazing, Roofing, and Paling—Charcoal Burning—Pile Driving—Brick and Tile Making—Getting and Working Stone—Preparation of Lime—Mortars, Cements, and Concretes—Preparing Slates—Excavating—Shifting Material—Blasting—Making Gunpowder and Gun-cotton—Road Making—Tent Making—Temporary Shelters—Shifts and Expedients of Camp Life. Autumn Term: Mensuration—Getting out Quantities—Mineralogy—Geology—General Hints on Metallurgy, &c.—Chemistry—Moulding—General Forging—Production of Blast for Forges—Horseshoe Making—Treatment of Steel and Making Tools—Turning and Fitting—Rivetting and Tank Work—Steam and the Steam Engine—Shifts and Expedients of Camp Life.

It was with a view probably to the introduction of this new and useful course of instruction that Mr. Francis Galton, M.A., F.R.S., was invited to preside, and the directors of the Crystal Palace have done well in taking him into their counsels, for there is no better authority on the shifts and expedients of camp and colonial life, or one better qualified to organize a suitable course of instruction, than the distinguished author of *The Art of Travelling in Wild Countries*, which ought to be a *code necesse* with all explorers or settlers in our numerous colonies and dependencies. After Mr. F. K. J. Shenton, the superintendent of the Crystal Palace Schools of Art, Science, and Literature, had read the report of the examiners, and the awards had been made.

Mr. GALTON, who was warmly welcomed, after expressing the satisfaction he felt at the continued progress of the school, said he had no right to speak on engineering matters generally, but there were one or two incidental points in which he felt great interest. One was the incidental advantages accruing from such an institution in teaching others how to teach. It demonstrated how in other places of instruction where engineering was not the primary object, and at schools generally, mechanical manipulation might be taught. It was clearly quite necessary that the hands should be taught as well as the mind, and there seemed to be a general desire that mechanics should be introduced into education more freely now than it had been. He understood that at Harrow a new professorship of mechanics had been formed, and a most eminent gentleman (Professor Stewart) was now at the head of a school which he had no doubt would impart high theoretical knowledge with considerable practical performance. He had been much struck with the want of power of mechanical manipulation amongst scientific men. The leaders in all branches of abstract science deplored the time they wasted from want of power to construct tentative apparatus. For many years he had been one of the members of the committee of Kew Observatory, which was founded, and which had for a long time supplied the great want of enabling the scientific men to have their apparatus put together without the enormous loss of time of having to go from one instrument to another with the risk of having their plans misunderstood, and the whole work performed in a dilatory and unsatisfactory manner. He knew that a knowledge of mechanical manipulation would be greatly welcomed by scientific men, from the fact of inquiries which he had made a few years since at the instance of one of them. There was another direction in which such knowledge was most valuable, and in that he felt the greatest interest, viz., the colonial section they were about to establish. In old days he had travelled much in wild countries, and he knew the value of shifts and expedients in camp and colonial life. People in England could not realize how important it was for a colonist to know those little expedients, obtained by a slight acquaintance with carpentry, blacksmithing, thimbleworking; and how much a little knowledge of such would add to the comfort of life in a new country. Comfort in a settler's house was not measured by fortune, for a man might have a large capital, but there were no shops and tradesmen available there as here, and it was necessary, therefore, for a settler to be to a considerable degree self-contained and able to repair whatever went wrong—repairing a broken tool, mending a kitchen utensil, or what not. That difficulty, however, under which Englishmen laboured in learning such handicrafts might be remedied by such instruction in mechanical manipulation as they proposed now to begin at their school, and which might be diffused by a kind of school course. As being the means of demonstrating how such instruction might be conveyed in schools of mechanical engineering, they would be performing an important and most useful function (there).

A vote of thanks having been unanimously carried to the examiners, Messrs. Anderson and Wilson, two civil engineers, those gentlemen, in responding, bore very flattering testimony to the practical character of the work in the school, and to the extraordinary progress made by the students, some of whom are men of note.

Mr. WILSON, the chief of the school, spoke of the crucial character of the examination which those two gentlemen had conducted, and awarded the prizes to the successful students for a prize essay on Earl Dudley's ironworks, which were recently visited.

19th Dec 1875

THEATRE ROYAL DRURY LANE.—MORNING PERFORMANCES OF WHITTINGTON AND HIS CAT will be given on WEDNESDAY, THURSDAY, and SATURDAY, Dec. 26, 27, and Jan. 1, and on every Monday, Wednesday, and Saturday during the month of January. Children and schools admitted at half price to all parts of the theatre, upper gallery excepted. Box-office open from 10 till 5 daily.

WHITTINGTON AND HIS CAT.—The celebrated YOKES FAMILY will make their REAPPEARANCE in England in the pantomime of Whittington and his Cat on BOXING NIGHT (Monday), Dec. 27. Box-office open from 10 till 5 daily.—THEATRE ROYAL DRURY LANE.

THEATRE ROYAL HAYMARKET.—Lessee and Manager, Mr. J. B. Hickstone.—EVERY EVENING, at 7.30, the large, in concert, by T. Edgar Pemberton, A HAPPY MARRIAGE, supported by Messrs. C. Warner, Russell, Westbury; Miss Minnie Walton, Miss M. Harris, and Mrs. F. W. Harris. At 9.15, a new and original comedy, by H. J. Byron, entitled MARRIED IN HASTE. Characters by Mr. Hermann Young, Messrs. C. Warner, Howe, Rogers, Brial, Roberts, Evans, and Mr. Henry J. Byron; Miss Emily Thomas, Miss Harcourt, and Miss Caroline Addison.—Stage Manager, Mr. C. D. Dore. Doors open at 7, commence at 7.30. No free list. Box-office open from 10 till 4.—Mr. Hickstone will on Monday, Dec. 27, commence a three weeks farewell engagement, previous to his return to America. Mr. Hickstone will reappear at the Haymarket, and Miss Lucy Hickstone will make her debut in London. Order of performances:—Garrick and Martin's Life Monday, Dec. 27, and five following nights; Home and Married Life Monday, Tuesday, Wednesday, and Thursday, Jan. 1, 2, 3, 4, and 5; Our American Cousin, Friday, Saturday, Monday, Tuesday, Wednesday, and Thursday, Jan. 7, 8, 9, 10, 11, 12, and 13; Garrick and A Regular Fit on Friday and Saturday, Jan. 14 and 15. Mr. Hickstone's band and last appearance Saturday, Jan. 15. Acting Manager, Mr. C. Walton.

LYCEUM.—MACBETH.—Last Four Nights. M. HENRY IRVING and Miss BATEMAN as Macbeth and Lady Macbeth, until Dec. 25, when the theatre will be closed, to RE-OPEN on BOXING NIGHT. Box-office open 10 till 4. Booking fees abolished.

LYCEUM.—HAMLET.—Mrs. Bateman begs to announce that, in compliance with a universally expressed wish, and in order that families visiting London during the holidays may enjoy the most instructive dramatic representation, she has arranged for Mr. HENRY IRVING to appear for a limited number of nights as HAMLET, commencing on BOXING NIGHT, December 27. The play will be given with the same care that marked its original production, and as far as possible with the same cast. A HELLISH MORNING FRIVOLOUSNESS of this great play will also be given, commencing January 1, and continuing every Saturday throughout the month, beginning at 8 p.m., and as it would be impossible for Mr. Irving to repeat at night so excellent a character, Mrs. Bateman has provided what she trusts will prove an attraction for the patrons of the Lyceum on the Saturday nights during the same month by having all preparation made for the representation of Dr. Mastrucchi's famous play, LEAH (beforehand), with which Mrs. Bateman has been so long identified, and in which she will appear on Saturday, January 1, and every succeeding Saturday evening throughout the month. Seats may now be secured for this series of performances. No charge for booking seats.

ROYAL ADELPHI THEATRE.—Proprietor, Mr. B. Webster. Lessee and Manager, F. B. Chatterton.—Last three nights of Little Emily, and of the company performing previous to the Christmas holidays.—TO-MORROW (Monday), Tuesday, and Wednesday will be performed the drama of LITTLE EMILY, dramatized by Andrew Hayday from Dickens's celebrated story of David Copperfield. Characteristic scenery by F. Lhoppe. Characters by Mr. J. Kearney, Mr. J. Pennington, Mr. W. J. Harris, Mr. W. M. Harris, Mr. H. Vaughan, Mr. P. Day, Mr. W. Howard, Mr. H. Cooper, Miss Lydia Fooks, Miss Ruth Souter, Miss Harcourt, Miss Harriet Conway, Miss Emily Nell, Miss R. Pennington, Miss Wood, Miss Charlton, &c. Preceded by the comic ballet of QUICKSILVER. Box-office open from 10 till 4. To conclude with the farce of THE GOOSE WITH THE GOLDEN EGGS. Prices from 6s. to 4s. 6d. Doors open at 4.30, commence at 4.45. Box-office open from 10 till 4 daily.

SHAUGHRAUN at the ADELPHI on BOXING NIGHT.—Mr. and Mrs. Ellen Farquhar as Conn and Moya.—Recently new scenery by F. Lhoppe and W. Harris.—New cast of characters.—The ENGAGEMENT of Mr. DOUGHAULT at Drury Lane Theatre terminating at Christmas, is TRANSFERRED to the ADELPHI THEATRE, in consequence of the anticipated attraction of the great Irish play, which will be performed during Christmas week, for the 14th, 15th, 16th, 17th, and 18th nights in London.

PRINCESS'S THEATRE.—Mr. JOSEPH JEFFERSON will APPEAR EVERY EVENING in the character of RUP VAN WINKLE, in the famous drama of that name, written by Irving Burroughs.—TO-MORROW (Monday), Tuesday, Wednesday, Thursday, and Friday, at 7, will be performed the drama of RUP VAN WINKLE. Rup Van Winkle, Mr. Joseph Jefferson, supported by Mr. Edmund Tople, Mr. E. Shepherd, Mr. F. W. Irish, Mr. J. H. Johnson, Mr. C. Chapman, Mr. T. W. Thomas, Mr. C. J. Smith, Mr. G. Weston, and Mr. R. F. B. Harris; Mrs. A. Menden, Miss Alice Hamilton, Miss R. Lee, Miss and Master Graham. Preceded by FAINT HEART NEVER WON FAIR PLAY. Miss Giddings, Mr. O. Tounis. To conclude with HEARTY A CLAN. Doors open at 10 past 4, commence at 7. Prices from 1s. to 4s. 6d. Box-office open from 10 till 4 daily.

GAIETY THEATRE, Strand.—Sole Lessee and Manager, Mr. John Hollingshead.—Mr. Toole, Miss Farrow, &c. in PAUL PRY, TOOLE AT SEA, and ICE ON FABLE FRANCAIS. MONDAY and Tuesday. Wednesday night (first time), Byron's new comic drama, TOTTER'S.—Boxing Day afternoon performance, Economic Economy and Toole at Sea. Day 2.30 to 4. Night 7.30 to 11. Prices from 6d. No fees.

PRINCE OF WALES'S ROYAL THEATRE.—Lessee and Manager, Miss Marie Wilton (Mrs. Bancroft).—Production of MABLE AND FALCON, an original comedy, written by Tom Taylor and Charles Reade, which will be acted EVERY EVENING at 8 o'clock. Act I. The Great Room at Old Court Garden Theatre.—Act II. No. 41, Queen's-square.—Act III. Prince's Home. Mr. Coghlan, Mr. Arthur, Mr. A. Wood, Mr. Tomlin, Mr. Glover, Mr. Marley, and Mr. Bancroft; Miss Marie Wilton (Mrs. Bancroft), Miss Ellen Terry, Miss Bennett, Miss Lee, and Master and Miss Glover. The scenery by Mr. Coghlan and Mr. Harford. Box-office hours 11 till 4. No fees. Doors closed at 7.30.—Notice. No performance on Christmas Eve.

ROYAL STRAND THEATRE.—Sole Lessee and Manager, Mrs. Swanborough.—On MONDAY, Tuesday, Wednesday, Thursday, and Friday, commence at 7, with TWO TO ONE. Mr. C. H. Anderson, Messrs Jones and Williams. At 8.45, A LESSON IN LOVE. Messrs H. Cox, J. G. Gresham, and W. H. Van Ness; Messrs Marion Terry, T. Lavis, and Miss Alice Swanborough. Also (last five nights of) LOVE. Messrs E. Terry, Mabel, R. Cox, H. Carter; Messrs A. Claude, L. Venn, M. Jones, &c. Preceded by Mr. Jones, Westford, &c.—On Boxing Night will be produced a new and original Christmas performance, entitled, H. Dacre, entitled ANTAETIC. For full particulars see bill.—Prices 6d. to 4s. 6d. at the box-office. No charge for booking.

ROYAL COURT THEATRE.—Lessee and Manager, Mr. Hans.—EVERY EVENING, at 8, his theatre will be produced a New and Original Farce, 100 in Tenor Ago, entitled BROKEN HEARTS, written by W. S. Gilbert. Characters will be played by Miss Matie Robertson (Mrs. Kibb), Miss Hollingshead, Miss Fooks, Miss Rickett, Mr. Kendall and Messrs W. Anson, Preceded by at 7.30, A MORNING CALL. Miss Fooks and Mr. C. Kelly; and to conclude with UNCLE'S WILL: Miss Matie Robertson and Mr. Kendall. Box-office hours 11 till 4. No fees for booking seats.—Acting Manager and Treasurer, Mr. JOHN HUNT.

VAUDEVILLE THEATRE.—Lessee, Messrs. D. James and T. Thorne.—Known success of Our Boys.—EVERY EVENING (Christmas Eve and Christmas night excepted) at 7.30, A WHIRLEDOWN. At 9, a new and original comedy, in three acts, entitled OUR BOYS, by Henry J. Byron. Commencing with A FUL FUL FUL. Supported by Messrs Wm. Farrow, Theo. Thorne, Chas. Hughes, C. W. Gresham, A. H. Roberts, A. Austin, and David Jones; Misses Amy Louisa, Kate Elliott, Nellie Walters, Chas. Richards, Sophia Larkin, &c.—Free list entirely suspended.—Acting Manager, Mr. D. McKay.

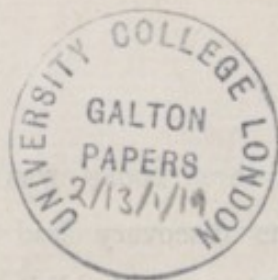
GLOBE THEATRE.—LYDIA THOMPSON.—Blackboard, the success of the day.—MAN IS NOT PERFECT. At 7.30, Fannie's BLUEBEARD, at 9.15, Charles Colville's FAIRY at 10.45. Messrs. Brough, Edwin Bockett, &c. &c.; Miss Lydia Thompson, Madeline R. Seliger, E. Chapman, A. Atterton, V. Cameron, J. Marston, &c. &c. &c.

GLOBE THEATRE.—Grand Comic Pantomime. Christmas Eve, Dec. 24.—Production of the CHRISTMAS ENTERTAINMENT OF BLUEBEARD, specially arranged by H. B. Farnie, Day, supported by Miss Lydia Thompson, and an augmented company, including with a Harlequinade, supported by Messrs. Driscoll, Wadman, Collette, and Bockett. Box plan now open.—BLUEBEARD'S ENTERTAINMENT PERFORMANCES, BOXING

THE CENTENARY OF GAS, f.12r

The present year, as most people know, marks the centenary of the invention of gas. Murdock, the inventor, was the son of a millwright at Cumnock, in Ayrshire, and the family traced their descent to some Flemish engineers. He came to Birmingham in 1777, and applied to the Soho factory. Boulton saw him, and Murdock was turning to the door heavy-hearted with the result of his application, when he dropped his hat. It struck the floor with a peculiar sound. "What is that?" asked Boulton sharply. Murdock showed him that it was made of wood, and added that he had turned it in a lathe of his own making. The far-seeing Boulton at once engaged him; and Murdock showed such marked ability that the firm sent him to superintend their mining works at Redruth in Cornwall. Sitting smoking one night by the fire he noticed the combustible gas spring in flames from the heated coals. He then filled the bowl of his pipe with bits of coal, covered it with clay, and, heating it between the bars, had the satisfaction of being able to ignite the gas which came out of the stem. His next device was to make the gas in a small retort and fill a bladder with it. This bladder being filled with gas, he attached it to a lantern, held the bladder under his arm, and was thus able to supply the pressure required to expel the gas. His wonderful lamp soon became the talk of the place, and though the actual date of the discovery is not known, it is certain that in 1792 he lighted up the offices at Redruth with gas. Many years later, Murdock built "Fair House," Sycamore-hill, Queen's Head-lane, Handsworth, and here most of his later experiments with gas were made, and the original pipe with which he made the discovery hung in a small sitting-room until a few years ago, when his family removed from Handsworth. "Fair House" still stands, amid a few stately sycamores, said to be the largest in the Midlands, and looking across you may see what remains of the old foundry of Boulton and Watt. Gas was used to celebrate the Peace of Amiens in 1802, and in 1814, presumably when the Allies entered Paris, the factory was lit up with 2,600 coloured lamps, the gas, it is said, being conveyed from the foundry at Smethwick to the factory at Handsworth. Boulton and Watt must have been hard masters, for Murdock was in his 44th year before he received more than £1 a week. A request for an increase of salary not being promptly acceded to, he made up his mind to leave, but an increase then to £1,000 a year—which was the sum another firm had offered—induced him to stay. An old man named Lloyd, who still works at the foundry, describes Murdock as a tall, dignified looking man. During the later years of his life he would wander up and down the lane, pick up sticks and carry them home. He was intimate with many men of genius, Dr Johnson, Dr Parr, Chantrey, Flaxman, Baskerville, and Sir William Herschell. He died on the 15th November, 1839, and was followed to his grave by several hundred workpeople.—*Birmingham Daily Mail*.

f. 14r



BRIAN HOUGHTON HODGSON, F.R.S., Corr. Member of French Institute, Chev. Legion Honour, and late Minister at the Court of Nepal, was born at the Lower Beech, near Macclesfield, February 1st, 1800. He was the eldest son of BRIAN HODGSON, banker, of Macclesfield, by KATHERINE, daughter of WILLIAM HOUGHTON, of Manchester, and Newton Park, Lancashire. He was educated at the Grammar School of Macclesfield, and the School of Dr. DELAFOSSE, at Richmond, and at the College of Haileybury. He entered the Indian Civil Service in 1818, and became Assistant to the Commissioner at Kumaon in 1819, and Secretary to the Embassy in Nepal in 1820, until 1829, when he was in charge for two years, and in 1833 was appointed Resident, which office he held until December, 1843, when he retired from the Service. He devoted himself to the study of the religion, languages, literature, ethnology and zoology of Nepal and Tibet, and published a series of articles (more than 170) on these subjects, in the Journal and Researches of the Asiatic Society of Bengal, and other periodicals, between 1824 and 1857.

Not long after his arrival in Nepal, a country then almost unknown in Europe, he announced the discovery (1824) of the original Sanscrit Buddhist Scriptures. The existence

of these books was before his time perfectly unknown, and the discovery laid the foundation of our knowledge of the history of Buddhism.

The celebrated oriental scholar, EUGENE BURNOUF, was the first to translate one of these works, the *Saddharma-pundarika*, and dedicated it to MR. HODGSON as "founder of the true study of Buddhism." MR. HODGSON's article on Buddhism was published in 1828 in the *Asiatic Researches*. "This article," says BURNOUF in his *Introduction to the History of Buddhism*, "contained an account of the different philosophical schools of Buddhism, which has never since been surpassed or equalled." Copies of these works, several hundred in number, MR. HODGSON distributed throughout Europe at his own expense, with the exception of those sent to France, many of which were purchased by the *Société Asiatique*. 144 works were presented by him to the *Asiatic Society of Bengal* in the years 1835-36, in 85 bundles; 85 to *Royal Asiatic Society*; 30 to *India O. Library*; 7 to *Bodelian*; 174 to *Société Asiatique* and M. BURNOUF, now in the *National Library of France*.

In 1835 the Grand Lama of Llassa having heard of MR. HODGSON's researches into his religion, Buddhism, and his desire to obtain its sacred books, entered into a friendly correspondence with him, and presented him with two complete copies of the *Tibetan Cyclopædia*, the *Kahgyur* and *Stangyur*. Each set contains 334 volumes, and comprises the whole circle of the sacred and profane literature of the Tibetans. They were printed in 1731 with wooden blocks on Tibetan paper.

One set he presented to the Library of the Asiatic Society of Bengal, the second to the East India Co., the latter is now in the India Office Library. They are unique in Europe; the Russian Government it is said, not long since, paid £2,000 for half of the series, and were unable to obtain the whole. The sets of Buddhist books, both Sanscrit and Tibetan, which were presented to the India Office Library have only recently begun to engage the attention of oriental scholars in England, and their importance for the comprehensive study of the phase of Buddhism they treat of, is likely to be appreciated more and more every year.

His letters on National Education for the people of India, were published in 1837, in which he strongly advocated the use of the Vernaculars. His "Literature and Religion of the Buddhists of the North," in 1841, and his "Aborigines of India," in 1847. His "Selections from the Records," No. XXVII, in 1857. Some of these were reprinted in 1874 as "Essays on the Languages, Literature and Religion of Nepal and Tibet" (Trübner); and in "1880, Miscellaneous Essays relating to Indian Subjects." Two vols. (Trübner's Oriental Series).

He made vast Zoological collections which he presented to the various Museums of Europe, giving more than 10,000 specimens to the British Museum alone (of which separate catalogues have been published), and also published more than 123 papers on Zoological subjects alone.

He was elected Corr. Member of Zoological Society of London in 1832, and received their silver medal in 1859.

was made Corr. Member of Royal Asiatic Society, London. 1832; 1837 he received gold medal from Société Asiatique, Paris, and was made Chevalier of Legion of Honour in 1838.

In 1844, Corr. Member of Institute of France in Department of Natural Science, and in 1850 in Department Belles Lettres.

1834, Corr. Member of Academy of Science, Turin.

1845, Hon. Member of Natural History Society of Manchester, and of Frankfort.

1846, Hon. Fellow of Ethnological Society, London.

1854, Hon. Member of Asiatic Society, Bengal.

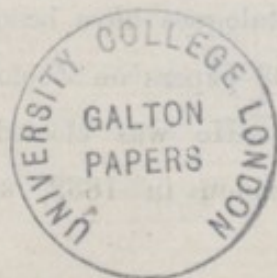
1858, Hon. Member of American Oriental Society, New York.

1862, Hon. Member of German Oriental Society.

1877, Fellow of Royal Society.

1876 and in 1877, Vice-President of Royal Asiatic Society, London.

In 1845, after an absence of a year and a half in England, he returned to India to continue his researches, and settled at Darjeeling, where he remained (with an interval of a year in England) until 1858, when he finally returned to England, having spent altogether 37 years in India.



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UNIVERSITY OF LONDON.

SOME RECENT RESEARCH WORK.

Only the other night the President of the Board of Education went out of his way to praise much of the educational work done by the Library Committee of the City of London. The value of that work is well exemplified in a report just completed by Professor Karl Pearson, F.R.S., who is head of the Department of Applied Mathematics at University College in the University of London. The report deals with the work done in that department during the last seven years "owing to the grant made by the Worshipful Company of Drapers." In 1903 the company granted to the University the sum of £1000 for the furtherance of research at University College, and the University Senate suggested that the grant should be applied for the purpose of assisting the higher work of Professor Karl Pearson's department. This grant may be looked upon as covering the years 1903 and 1904. In 1905 a further grant of £500 was made by the company, to be expended at the rate of £100 a year for the next five years, and this covers the years 1905, 1906, 1907, 1908, and 1909. The company have just renewed their grant of £500, to be expended as before at the rate of £100 a year for the next five years. While it is impossible to distinguish absolutely the work done because of this grant, yet it has admittedly been the "mainstay" of the higher work done in the department during the last seven years. In the routine work for the degrees in science and arts a complete course in the higher teaching of mathematical physics has now been provided, and these lectures have effectively served their purpose of encouraging research work. Much of the best work done by means of the grant has been in the routine work in graphics for the University's engineering degrees. Students trained in this section have contributed as post-graduates to the work done under the grant, and to meet their requirements a special series, Drapers' Company Memoirs, Technical Series, has been instituted. These "memoirs" have been of great practical importance.

BIOLOGICAL INVESTIGATIONS.

In the Biometrical and Statistical Laboratory the Drapers' grant has been of fundamental aid. Some of the work had special bearing on subjects of executive importance. Thus a report was drawn up on the Scottish Pauper Lunacy (State); a report on the variability owing to meteorological conditions of the time from the Royal Artillery; and a report on the effect of inoculation against enteric fever in the Army in India and South Africa. At the present time workers in the laboratory are reducing a splendid system of original measurements and observations made in His Majesty's service. A number of memoirs dealing with biological problems have been issued or are in progress. No. I gave for the first time a method of measuring the degree of relationship between characters which could not be represented on a quantitative scale. It provided an effective statistical method of dealing with important problems in inheritance and sociology. No. II, extended statistical treatment to a wide class of biometrical cases in which the change in one character influences a second, but not proportionally; for example, the effect of growth in plants and animals. No. III, was a contribution to the problem of insect migration, having special reference to the practical problem of the site of clearance needed in the case of mosquito destruction in anti-malaria campaigns. A "memoir" shortly to be issued deals with Albinism in man.

NATIONAL DETERIORATION.

Another of the research series of publications deals with "Studies in National Deterioration." The object of this series was to study the separate factors as to health, fertility, and inheritance in man which make for national fitness and racial welfare. No. I of this series dealt with the influence of various social and moral factors on the birth-rate. No. II dealt with the inheritance of the tuberculous constitution in man and led to the acceptance by man of one sanitation of heredity, and the study of vital statistics. No. III dealt further with the problem of tuberculosis, considering the question of marital infection in the case of husband or wife being tuberculous; the conclusion drawn being that infection is less important than the existence of a constitutional tendency. No. IV, will be a memoir by Professor Karl Pearson, dealing with the health of the school child in relation to its mental characters.

EUGENICS.

In 1907 Mr Francis Galton founded a laboratory in the University "to study the agencies under social control that may improve or degenerate the racial qualities of future generations either physically or mentally," and the time and energy which Professor Karl Pearson has been able to give to this work has been largely due to the Drapers' grant having made it possible to provide an additional assistant. The Eugenics Laboratory has now started a memoir series of its own, which deals with investigations bearing directly on racial welfare. This laboratory has also recently undertaken "The Treasury of Human Inheritance," a work of an extensive character, which is an attempt to bring together in one publication all the literature published and much unpublished material bearing on the inheritance of special characters, physical, mental, or pathological, in man.

The report deals with other work done by the help of the fund such as the practical teaching of astronomy, and Professor Karl Pearson mentions the present chief needs "of a department which the company have done so much to develop." These are further aid in the college astronomical equipment, and especially to the research publication fund.

UNIVERSITY INTELLIGENCE.

OXFORD, MAY 18.

GAISFORD PRIZES.

The judges for the Gaisford Prizes, 1909, have awarded the prizes as follows:—

For Greek Verse.—Algernon Edmund Arthur Farrer Spencer, scholar of Christ Church. *Proxima accessit*, Edgar Lobel, scholar of Balliol College.

For Greek Prose.—George Douglas Brooks, scholar of Worcester College.

The subjects appointed for the prizes in 1910 are:—
1. For Greek Homeric Hexameters.—Vergil, *Æneid* II. 248-265.

2. For Greek Prose in the Style of Demosthenes:—
Τὴν ῥῆσιν τῶν Τελευτῶν Διοφάντου.

STANHOPE AND GLADSTONE PRIZES.

The judges for the Stanhope Prize and Gladstone Prize, 1909, have made the following awards:—

Stanhope Historical Essay Prize.—Leonard Victor Davies Owen, scholar of Keble College.

Gladstone Memorial Prize.—Alwyn Terrell Petre Williams, scholar of Jesus College.

The subject for 1910 will be:—*Charles Montagu, Earl of Halifax.*

RESIGNATION OF PROFESSOR DICEY.

Mr. Albert Dacey, Honorary D.C.L. and Fellow of All Souls College, has intimated to the Vice-Chancellor his intention of resigning the Vinerian Professorship of English Law, which he has held since 1882, at Midsummer.

Professor Dacey's resignation, after 27 years' tenure of office, is not, we are glad to say, the result of any failure of health.

THE KRISHNAVARMA MEMORIAL.

The Hobsonabad Council has taken the opinion of the standing council of the University (Mr. J. A. Simon, K.C., M.P.), on the memorial signed by 115 members of Congregation, asking that a resolution be submitted to the House for the abolition of the Herbert Spencer Lectureship, and the return of the endowment to the donor, Pandit Shyamaji Krishnavarma.

The reply is to the effect that the constitution of the Trust is such that there is no method by which the University can lawfully determine it. No action of this description can therefore be taken, but it may prove difficult to persuade distinguished men to accept appointment to a lectureship endowed by a donor holding the opinions which Mr. Krishnavarma has expressed in *The Times* and in the *Indian Sociologist*, and it is possible that the aim of the memorialists may thus be ultimately attained. There is also a feeling among some members of the University that steps should be taken to deprive Mr. Krishnavarma of his M.A. degree, a reference to which appears regularly in his paper.

PROFESSORSHIP OF MILITARY HISTORY.

A statute for the establishment of the Chichele Professorship of Military History, to be founded by All Souls College, will be promulgated in Congregation on May 25. It is proposed that appointments shall be for five years, but that the professor shall be eligible for re-election. The endowment will consist of an annual payment of £300 from All Souls College in addition to the emoluments of a Fellowship (£200).

EXHIBITIONS.

F. D. Barker, of the Royal Grammar School, Colchester, has been elected to an Exhibition for Modern Languages at Exeter College.

Walter Schofield, non-collegiate, has been elected to an Exhibition by the Leathersellers' Company.

THE BODLEIAN LIBRARY.

The Trustees of the University Endowment Fund have offered to contribute the sum required to defray the cost of the construction of an underground chamber within the precincts of the Radcliffe Camera for the storage of books belonging to the Bodleian Library, and a decree accepting the proposal will be brought forward in Convocation on June 1.

The camera is the property of the trustees under the will of Dr. John Radcliffe, who are willing to grant a new lease of the camera to the University for 99 years in order that the project may be carried out. The University will at the same time grant to the trustees a new lease, for a similar period, of the new Radcliffe Library at the University Museum. The storage which it is thus proposed to afford is in accordance with a plan of the late Mr. Woodthorpe for the construction of an underground chamber of brick, cased in concrete and asphalt, on the northern portion of the site surrounding the Radcliffe Camera, and fitted with movable cases. It is estimated that the shed room thus provided would suffice for the normal increase of the library for about fifty years, and a similar chamber could, when necessary, be formed on the southern side. A scheme of this nature was considered in 1900, but had to be abandoned owing to financial difficulties, and a temporary provision was made in the basement of the new schools.

Great care has been taken to make certain that the underground storage is satisfactory for books, and the opinion of more than one architect in favour of the suggestion is confirmed by recent experience in storing books below the ground level in the Sheldonian Theatre, the Old Ashmolean, the new Examination Schools, and All Souls College. The Curators of the Bodleian therefore believe that the proposed chamber will supply a secure place of storage, and they have been assured by a special report from Mr. Elliott-Cooper, C.E., that the work will not injuriously affect the safety of the surrounding buildings. The provision of an underground connexion between the chamber and the Bodleian building is not part of the present scheme, but the architects who have been consulted (Mr. Saunders and Mr. Lewis Solomon) agree with Mr. Elliott-Cooper that the construction of such a passage is feasible and that it will be practicable to arrange the details of construction and fittings in such a way as not to hinder the making of such a connexion in the future.

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to the Science of Eugenics, written in non-technical
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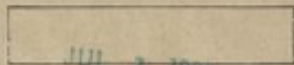
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THE TRUE BASIS OF EDUCATION.

LORD AVEBURY'S VIEWS.

An assembly of the College Faculties of University College was held yesterday afternoon at the University, Gower-street, under the presidency of Lord Avebury.

In his report the Dean of the Faculty of Science (Professor F. T. TROTTER) stated that the Hall of Residence for men students at Ealing had already taken an important position in the student life of the University. The project of an Officers' Training Corps in connection with the Territorial Forces had already taken shape, and at the present time numbered nearly 600, of whom 154 were members of University College. He also stated that the development of the College laboratories projected seven years ago was proceeding apace, but the new chemical laboratories had not yet been begun. The amount required for these laboratories was £70,000, towards which the Chancellor (Lord Rosebery) had promised £1,000 and Dr. Ludwig Mond a like sum. As a result of the scheme of co-ordination with King's College lectures on radio-telegraphy and radio-telephony had been given by Professor Fleming, which attracted a number of officials from the Engineering Department of the General Post Office. The chief changes contemplated for next session were a course in experimental pedagogy for London County Council teachers and the creation of a post of demonstrator in experimental psychology. The Oriental School had acquired scholarships for the promotion of the study of Oriental languages, more particularly of Persian, Hindustani, and Chinese, founded by his daughters in memory of their father, the late Colonel Ouseley. This was the first endowment for the study of Oriental languages that the University had received, and the need of more funds was emphasised by the loss to London by the final departure of Professor Rhys Davids for Manchester. Classes in Burmese had also been established for students going to that country for commercial purposes, and it was hoped that this would be extended to other departments of the Oriental School with a view to linking more closely the distant parts of the Empire to the Mother Country. In the Faculty of Law the most noteworthy development had been the introduction among optional subjects of the laws of the Dominions of the British Empire. It is also contemplated to institute special courses in administration and law for those going to or coming from the Colonies. Lectures had also been given in the science of eugenics in connection with the laboratory founded by Sir Francis Galton, and the teaching would be expanded if money were available for increasing the staff and for library purposes. A considerable sum could at present be spent on works of heredity and criminology, which appeared to be quite inaccessible in this country. The number of students for the session was 1,376, against 1,361 a year ago. No fewer than 141 students had graduated during the last year in the faculties of arts, science, engineering, and medicine, of whom 59 took honours and 45 took degrees higher than that of bachelor.

After the reading of the report the Provost announced the names of the scholars, exhibitioners, winners of diplomas, and medallists; and the Professors announced the names of the successful competitors for class medals, prizes, and first-class certificates, many of whom were presented to the Chairman.

In addressing the students Lord AVEBURY said that he trusted that for many years to come they would look back with pleasure to that day. To the unsuccessful ones he would say that if they had done their best they need not be discouraged. Many of our greatest men had not been those who distinguished themselves at school or college, and in this connection he might mention Sir Isaac Newton, Swift, Scott, and Clive, and lastly his old master and friend Charles Darwin. Darwin never distinguished himself at college, but was gradually working up to success in after life. The prizes and certificates awarded that day were not the real gain, which lay in the habits of application and the stores of knowledge that the students had acquired. If knowledge were inferior to wisdom it was the best foundation on which wisdom could be built. Referring to the educational system of the University of London he said that it was better than the system of many similar institutions, where a too narrow curriculum existed and where a student could take a degree without knowing anything of science or of a modern language. In London they always insisted that some knowledge of science was required. The true system of education was to construct a broad platform and build a gradually narrowing pyramid of specialisation upon it.

THE TIMES, FRIDAY, JULY 23, 1909.

UNIVERSITY INTELLIGENCE.

LEEDS, JULY 22.

THE LATE LORD RIPON.

At a meeting of the council yesterday a resolution was passed unanimously placing on record the profound sorrow of the council at the death of Lord Ripon, first Chancellor of the University. The resolution added that the council recognized that the University had enjoyed an inestimable privilege in having so high-minded, distinguished, and sympathetic a servant of the public as its first Chancellor.

LONDON, JULY 22.

EUGENICS.

A report by Professor Karl Pearson has been presented at a meeting of the Senate showing the progress of the work of the Francis Galton Laboratory for National Eugenics during the past 16 months. The Senate have voted their cordial thanks to Sir Francis Galton for a further donation of £500 for the maintenance of the laboratory, and recorded their high appreciation of the services rendered by Professor Pearson, under whose supervision the work is carried on. Mr. David Heron and Miss E. M. Elderton have been reappointed respectively Galton research Fellow and Galton research scholar for a year from next February.

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THE INFLUENCE OF HEREDITY AND ENVIRONMENT ON SIGHT.

THE Francis Galton Eugenics Laboratory at University College, London, which is doing such good work in many directions under the control of Professor Karl Pearson, has recently issued a "First Study of the Inheritance of Vision and of the Relative Influence of Heredity and Environment on Sight," by Miss Amy Barrington and Professor Karl Pearson. The paper is a mathematical inquiry founded upon various statistics, the chief of which are two communications by Dr. Adolf Steiger of Zürich on the corneal curvature and the Report on 1400 School Children issued by the Edinburgh Charity Organisation Society. Statistics derived from elementary schools in London and Glasgow have also been examined but afford less valuable material. We make no attempt to criticise the writers' arguments and calculations in detail, but we think that their general conclusions will be of interest. They find that there is no evidence whatever that overcrowded, poverty-stricken homes, or physically ill-conditioned or immoral parentages are *markedly* detrimental to the children's eyesight. There is no sufficient evidence that school environment has a deleterious effect on the eyesight of children. Though changes of vision occur during school years they hold that these are phases of one law of growth, a passage from hypermetropia to emmetropia and myopia of the eyes of "unstable stocks." They find ample evidence that refraction and keenness of vision are inherited characters, and that the degree of correlation between the eyesight of pairs of relatives is of a wholly different order to the correlation of eyesight with home environment. Intelligence, as judged by the teacher, is correlated with vision in only a moderate manner (0.16). We scarcely think that the data justify so strongly worded an *ex cathedra* statement as that made by the writers in conclusion. "The first thing is good stock, and the second thing is good stock, and the third thing is good stock, and when you have paid attention to these three things fit environment will keep your material

in good condition. No environmental or educational grindstone is of service unless the tool to be ground is of genuine steel—of tough race and tempered stock." The words are too sweeping.

MR. KRISHNAVARMA AND OXFORD.

TO THE EDITOR OF THE TIMES.

Sir,—I learn from *The Times* of May 19 that the Hebdomadal Council of Oxford University has taken the opinion of its standing counsel (Mr. J. A. Simon, K.C., M.P.) on the memorial signed by 118 members of Congregation, asking that a resolution be submitted to the House for the abolition of the Herbert Spencer Lectureship, and the return of the endowment to me, and that "such steps be taken as the University may be advised will secure these ends with the utmost promptitude." The counsel's opinion, I note, is to the effect that the constitution of the trust is such that there is no method by which the University can lawfully determine it. Your Oxford representative, who is usually well informed in University intelligence, adds:—

"No action of this description can therefore be taken, but it may prove difficult to persuade distinguished men to accept appointment to a lectureship endowed by a donor holding the opinions which Mr. Krishnavarma has expressed in *The Times* and in the *Indian Sociologist*, and it is possible that the aim of the memorialists may thus be ultimately attained. There is also a feeling among some members of the University that steps should be taken to deprive Mr. Krishnavarma of his M.A. degree, a reference to which appears regularly in his paper."

Much as I regret the action of the 118 members of the Congregation, with some of whom I had amicable relations for many years, I must give them credit for their honesty of purpose, although, owing to their bias of patriotism, they are opposed to my line of argument and to my methods for the achievement of Indian independence. I can well understand and in a way admire the feelings of men like Professor Oman, who is reported to have said in reference to my endowment that the whole University is humiliated by being under obligations to a man who extols murder and glorifies assassins as "martyrs," and who is spreading the poison of sedition in India, and to have further said:—

"Are we to include in our University prayer of thanksgiving for our benefactors such a man as this? I sincerely trust not, and I have strong hopes that the lectureship will be abolished, and the capital sum, which I believe to be £1,000—returned to Mr. Krishnavarma."

According to your Oxford Correspondent, the Herbert Spencer lectureship will henceforth remain a dead letter, and the real object of the endowment will thus be defeated. In the course of a leading article in *The Times* of March 10 you approved of the proposal to repudiate my benefactions and saw the justice of returning my money to me in conformity with the views of "a number of distinguished members of the University of Oxford."

Now to get over this caper is a question well worth consideration in the interest of all concerned. It is true the University cannot by itself determine the trust, since under the terms of the decree approved by Convocation on March 18, 1904, it is laid down in Article 14:—"These regulations shall not be altered during the lifetime of the founder without his consent as well as that of Convocation." It would seem, therefore, that with my consent the memorialists can have their wishes carried out.

I have no desire to embarrass the University by thrusting on it the execution of a duty which it is unwilling to perform, particularly as I owe many personal kindnesses to quite a number of its governing authorities. In my opinion no legal difficulty will arise in determining the trust, if all parties to it decide to settle the matter amicably.

As to your correspondent's remark about the feeling among some members of the University that I should be deprived of my M.A. degree, I may with your permission mention that it was not an honorary degree conferred on me like that received by my colleagues teaching Oriental languages at Oxford, but that I earned it by hard work in 1882 as testified by the then Vice-Chancellor and Master of Balliol College (Professor Jowett), who put on record his opinion about me:—"He has given proof of unusual ability in obtaining an Oxford degree, having had no acquaintance with Latin or Greek previously. . . . He is a man of great energy, and is likely to distinguish himself"—and by the late Sir Monier Williams, who wrote about me in an English newspaper:—"Another interesting point connected with his second examination is that, although not a Christian, he selected as one of his subjects the four Gospels in the original Greek, and passed a highly creditable examination both in the text and subject-matter, showing by his answers, written and oral, a better acquaintance with the facts of Christianity than is commonly found even among the young men who profess Christianity."

Moreover, I submit that I cannot be deprived of my M.A. degree without my consent, since the Decree on the Herbert Spencer Lectureship referred to above contains the preamble "Whereas Pandit Rhyamaji Krishnavarma, M.A., of Balliol College," &c., and it cannot be abrogated before my consent is obtained. Through the medium of your hospitable columns I, however, beg to say that I am prepared to forgo the right of using my degree in future for any purpose whatever, if my action would smooth matters all round for the University authorities in abolishing the Herbert Spencer Lectureship and returning the amount of the endowment to me as desired by the 118 influential members of the University of Oxford.

Yours faithfully,

SHYAMAJI KRISHNAVARMA, Editor of the *Indian Sociologist*.
10, Avenue Ingres, Passy, Paris, May 24.

NATIONAL DEFENCE.

FOREIGNERS IN BRITISH SHIPYARDS.

The Newcastle correspondent of the *Shipping Gazette* states that at the instance of the Admiralty all foreigners who are not naturalized, and are employed in British shipyards doing Admiralty work, are being discharged. It is doubted, he states, whether the number of foreigners employed on the North-East Coast, or in any British shipyard, is appreciable. There may, however, it is added, be a number of premium apprentices learning the ship-building business to whom the regulation will apply.

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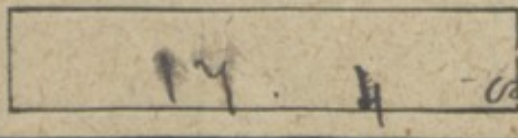
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BRITISH JOURNAL

THE Francis Galton Eugenics Laboratory (University College, London) has commenced the issue of a new periodical under the title of the *Treasury of Human Inheritance*, in which will be given collections of pedigrees illustrating the inheritance of various characters in man. In the first double part, which is before us, the pedigrees,

collected from various sources, relate to the transmission of diabetes insipidus, pulmonary tuberculosis, chronic hereditary trophoedema, split foot, polydactylism, brachydactylism, deafmutism, and ability. Each group of pedigrees is accompanied by an introductory memoir by the contributor, giving a brief description of the character itself, illustrated in several cases by very finely executed plates, a verbal description of the individuals referred to in the pedigrees, and a bibliography. The pedigrees themselves, of which there are seventy-four, are given on large plates, special symbols being used to denote individuals possessing or not possessing the character, or showing it only to a modified degree. The *Treasury*, which is published by Messrs. Dulau and Co., promises to be of the highest value, and Prof. Karl Pearson, who acts as general editor, is to be heartily congratulated on his adoption of the scheme. Anyone who has attempted to trace the published pedigrees relating to the transmission of any one character knows how much labour is involved in the search, and the collection of such pedigrees, both new and old, into one publication will render inestimable service to all those who are interested in the study of heredity.

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OPINION

[APRIL 9, 1909.]

an individual knows own person and per- demonstrate, the which he bears, and himself a product, transmission, since would probably give individuals, then a dereliction of his nature if he refrains

ood?" of heredity were and Spencer sup- on would retain the place which so ve given it, but it this point cannot asised—from the very of the limita- tance to the in- al that education ed by selection as trument of race

Acquired Characters

ask is to teach the ge that acquired not transmissible. ain, the constitu-

tion of the germ-plasm, and therefore its potentialities, are beyond the control of the wisest and most conscientious."

"Nevertheless, our personal responsibility remains, and finds an abundant sphere in which to exercise itself. . . . We cannot select our parents, but we can select our parents-in-law. It is for the individual, whether man or woman, to choose for his or her unborn children one of their parents." We must, insists Dr. Saleeby, "act with foresight of the supreme end which the racial instinct exists in order to serve."

"That which the best human nature is capable of is within the reach of human nature at large," said Herbert Spencer, and Dr. Saleeby looks to eugenic education as the goal towards which all other education should lead. "It is," he declares, "the provident use of the racial instinct that will some day transform the world."

personal duty, and is noble and reverend, however lamentable the result or ludicrous the method."

The Racial Aspects of the Body

To many the most interesting part of this thought-provoking book will be the last 150 pages, in which the great racial aspects of this question of the healthy body are treated. The writer is not content merely to help a few men. As his eye travels down the ages to be, he longs to see a splendid race of men, perfect in body and great of soul. He maintains that "until the ideal of parenthood and of the absolute supremacy of the racial function, morally considered, is recognised; until such things as patriotism and the sense of national duty, as well as of personal responsibility and aspiration, are brought openly, deliberately, and without apology to bear upon the racial instinct and its consequences, we shall see little substantial improvement in the human lot, little of the progress which withstands a moment's criticism."

These chapters discuss with acumen the great problem of sex and Racial Hygiene. "One of our aims," says the writer, "is happiness, and for many readers a condition of happiness is happy parenthood. It is well, then, that we should know something of those biological laws which go far to determine whether parenthood shall bring happiness or horror."

Selection Must Displace Education

"It is even now a duty for those who are high enough in the moral scale that, knowing themselves trustees of a germ-plasm which will certainly, or almost certainly, give rise to diseased or defective individuals, they shall put an end to it in their own persons by foregoing parenthood. If, on the

HERE is a striking parable by Miss E. Fox Howard, which we take from the "Friends' Fellowship Papers":—

"A dog tried to open a door. He scratched it, threw himself against it, struggled to get his nose under it and burrow his way out, but at last he decided that the door would not open and never could open, so he lay down before it and went to sleep.

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The Boy and the Impossible

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"And he wrote an angry letter of remonstrance to the great professor who had sent him the paper. But the professor only smiled, for he was a geologist and had read the message of the rocks. He himself, one of the deepest thinkers of the day, sat late into the night among his books, trying to fit some newly-discovered laws of physics into his schemes of things and to bring his mind nearer to a solution of the great Why of the Universe. At last he bowed his head and said, 'It is impossible. Facts are too conflicting. I cannot explain them, and I doubt if there is any explanation. I have no proof of the existence of a Divine First Cause or of a spiritual world, and therefore I refuse to take cognisance of them.'

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THE IMPOSSIBLE

function is relevant. The air we breathe, the clothes we wear, the food and drink we consume; sleep, habits of all kinds, physical and mental; the use of stimulants and narcotics; exercise of the muscles, the senses, the emotions, and the intellect, all are of greater or less moment."

An Ideal for the Body

Dr. Saleeby deals with them all in this book. He indicates the best average conditions for human life, "whilst recognising and welcoming the existence of many persons who thrive and have thrived upon their defiance." "The value of healthy habits," he says, "is that, once formed, they can be left to the subconscious mind, whilst the conscious self, instead of feeling itself for ever chained to the body of this death, can dance in its fetters."

"He who seeks to treat his body in such a fashion as will make for the dignity and worth of his mind has a high ideal of personal duty, and is noble and reverend, however lamentable the result or ludicrous the method."

The Racial Aspects of the Body

To many the most interesting part of this thought-provoking book will be the last 150 pages, in which the great racial aspects of this question of the healthy body are treated. The writer is not content merely to help a few men. As his eye travels down the ages to be, he longs to see a splendid race of men, perfect in body and great of soul. He maintains that "until the ideal of parenthood and of the absolute supremacy of the racial function, morally considered, is recognised; until such things as patriotism and the sense of national duty, as well as of personal responsibility and aspiration, are brought openly, deliberately, and without apology to bear upon the racial instinct and its consequences, we shall see little substantial improvement in the human lot, little of the progress which withstands a moment's criticism."

These chapters discuss with acumen the great problem of sex and Racial Hygiene. "One of our aims," says the writer, "is happiness, and for many readers a condition of happiness is happy parenthood. It is well, then, that we should know something of those biological laws which go far to determine whether parenthood shall bring happiness or horror."

Selection Must Displace Education

"It is even now a duty for those who are high enough in the moral scale that, knowing themselves trustees of a germ-plasm which will certainly, or almost certainly, give rise to diseased or defective individuals, they shall put an end to it in their own persons by foregoing parenthood. If, on the

other hand, an individual knows that, as his own person and personality may demonstrate, the germ-plasm which he bears, and of which he is himself a product, is worthy of transmission, since it is such as would probably give rise to worthy individuals, then may it not be a dereliction of his duty to the future if he refrains from parenthood?"

"If the facts of heredity were what Darwin and Spencer supposed, education would retain the unchallenged place which so many ages have given it, but it follows—and this point cannot be over-emphasised—from the modern discovery of the limitation of inheritance to the inherent or germinal that education must be displaced by selection as the supreme instrument of race progress."

The Problem of Acquired Characters

"Our first task is to teach the public at large that acquired characters are not transmissible. . . . In the main, the constitu-

tion of the germ-plasm, and therefore its potentialities, are beyond the control of the wisest and most conscientious."

"Nevertheless, our personal responsibility remains, and finds an abundant sphere in which to exercise itself. . . . We cannot select our parents, but we can select our parents-in-law. It is for the individual, whether man or woman, to choose for his or her unborn children one of their parents." We must, insists Dr. Saleeby, "act with foresight of the supreme end which the racial instinct exists in order to serve."

"That which the best human nature is capable of is within the reach of human nature at large," said Herbert Spencer, and Dr. Saleeby looks to eugenic education as the goal towards which all other education should lead. "It is," he declares, "the provident use of the racial instinct that will some day transform the world."

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Public Opinion

A WEEKLY REVIEW OF CURRENT THOUGHT AND ACTIVITY

EDITED BY PERCY L. PARKER

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Registered at G.P.O.

FRIDAY, APRIL 9, 1909.

TWOPENCE WEEKLY.
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THE RESURRECTION OF THE BODY

AN ARGUMENT THAT IT IS THE CIVIC, DOMESTIC, AND PERSONAL DUTY OF EVERY MAN TO BE PHYSICALLY FIT, SO THAT SOCIETY MAY BENEFIT BY A PROPER SHARE OF HIS ENERGY

WHEN the snowdrop pierces the snow (the French call it "perce neige") and the crocuses put forth their points of colour to herald the coming pageant of spring, the heart of man stirs within him at the thought of a never-ending life which gathers fresh strength from age to age.

Easter is the great festival of the new age—the resurrection of the dead—the great awakening. Some await the resurrection of the body; others, more daring, claim for those they love a swifter entry into the world of spirit. These things are a mystery.

The Divine Urge

But to-day there is a growing sense that the life of the body is a part—just one stage—of the eternal life which is the heritage of man, and that the conditions under which it lives in this cycle of being affect the life to be. This growing sense has created a demand for the resurrection of the body from low forms of life, from ignoble conditions, from poor vitality to greatness of being and to zest for life. And that demand for the perfectly healthy man and woman, healthy in mind and body, is the dynamic which is to bring order out of chaos in this world of men and women. In it there is the Divine urge which no man can stay, and happy be those who set their hands to its fulfilment.

The Study of Eugenics

One sign of this new demand for the re-creation of man is the Galton Laboratory for National Eugenics at the University of London—the outcome of Mr. Francis Galton's great investigations. The "Eugenics Education Society" is another. Among its most strenuous and able prophets

is Dr. C. W. Saleeby, M.D., F.R.S., who is lending an extraordinarily well-equipped mind, a lucid pen, and an eloquent tongue to the advocacy of this great ideal.

It doth not yet appear what we shall be. But every average man knows quite well how much greater and more efficient we might be in this world if the known knowledge were effectively used. Sir Ray Lankester laments that "nothing is done by those who determine the expenditure of the revenues of great States to deal adequately with the removal from human life of the anguish and misery caused by premature death."

Dr. Eden Paul declares that "everywhere and at all times organised co-operative society will have need of the organised knowledge which is science." And Dr. C. W. Saleeby, in his new book—"Health, Strength, and Happiness" (Grant Richards, 6s.)—to which we desire to call special attention, enlarges with great insight and force on what man might be if he did but know the things that made for his physical peace.

The Body and the Mind

"We know," he says, "that the body and the mind are intimately related in such wise that injury to the one is injury to the other, and this fact it is which must differentiate the new from the old asceticism, the new from the old ideas of the whole duty of health. . . . The body, as we were taught nearly two thousand years ago, is indeed the temple of something immeasurably higher than itself, and that something we rightly worship, for the *psyche* of man is the highest thing we know. . . .

"To the worshippers of muscle may be quoted the verse of the Psalmist, who reminds us that the Lord 'taketh not pleasure in the legs of a man.' The Lord taketh pleasure in those that fear Him, in those that hope in His mercy." It is part of the new asceticism," says Dr. Saleeby, "to inquire into this matter of the legs of a man, and ask how they should be treated—but on the definite assumption that their well-being and strength is not an end in itself, but merely to be sought in so far as it serves the man himself."

The Brain is the Man

The chief question which Dr. Saleeby attempts to answer in his vivacious and exact pages is—"How ought I to treat my body so as best and longest to preserve the health, the vigour, and therefore the happiness of my brain—which, for practical purposes, is myself?"

"The new asceticism," he continues, "is entirely one with the doctrine of Prof. Forel, the great psychologist of Zurich, that 'the brain is the man.' . . . The 'average sensual man' is one who uses his brain to serve his body, to find attractive food for his stomach, or diversion for the centres concerned with racial purposes in his spinal cord. The new ascetic, on the other hand, is he who uses his body to serve his brain, which is the substantial man."

"The maintenance of the brain in healthy and happy working order for indefinite periods is as practicable as the re-creation of the smallest and simplest of its two thousand million cells, once destroyed, is impracticable. In this business every bodily need

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THE TIMES,
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FEB 1 1909

LONDON, JAN. 30.

LECTURES ON EUGENICS.

A course of eight lectures on National Eugenics, in connexion with the Galton Laboratory, will be given at University College on Tuesdays at 5 o'clock, beginning on February 23. The first lecture will be given by Professor Karl Pearson on "The Purport of the Science of Eugenics." On the four following Tuesdays Mr. D. Heron will lecture on methods of eugenic inquiry, transmission of physical characters in man, transmission of psychical characters in man, and inheritance of disease and deformity. The course will be continued in the third term, beginning on May 4, when Miss E. Elderton will lecture on "Effects of Kinship in Marriage," and "Comparison of Heredity and Environmental Factors." Full particulars of the lectures can be obtained from the secretary of University College.

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70/1/09

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THE MORNING POST,

346, Strand, W.C.

NOV 26 1908

INHERITED QUALITIES.—Mr. David Heron last evening addressed the Eugenics Education Society at Denison House on "The Work of the Eugenics Laboratory," which, he said, was designed to be a storehouse of material bearing on the mental and physical conditions of man. Much attention had been given to the inheritance of ability, and it was found on investigation that the noteworthy members of the community sprang from very few families. In illustration of this he displayed a pedigree going back four or five generations in which, out of 26 males, nine were fellows of the Royal Society, and the great majority were very able men. The reverse was shown in tracing the stock derived from an English and Hindu marriage, for want of mental balance characterised all but a few of the descendants in four generations. These pedigrees indicated that mental strength and mental weakness were inherited. Statistics based on investigation of the conditions of some thousands of persons showed that not only mental but physical qualities also were transmitted, and that they were inherited in about the same proportion. He held that the inheritance factor was more important than the infection factor.

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SHEFFIELD TELEGRAPH.

11/2/19

A Yorkshire Evening.

I do not recollect at any of their recent concerts so large an attendance as the Society of Yorkshiremen had in the Holborn Restaurant to-night. From the tables arranged on the floor of the King's Hall it overflowed into the galleries above. The concert was, from a musical as well as a social standpoint, extremely enjoyable. The feature of the evening was the amazing tenor singing of Miss Ruby Helder. A slip of a girl, with hair not up, this maid has the full round voice of a man, and knows how to use it artistically.

The new Chairman of the Council, Mr. Harper Woodhead, from whom, by the way, came a wholesome bit of Yorkshire dialect, is bent on bringing the Society to the goal of a thousand members. A fresh start towards that ideal has been made with the new year, and with many social events ahead, including a special trip to the York pageant and probably monthly dinners and social evenings, the membership roll is bound to lengthen.

Remember May 24.

Empire Day is a long way off, but the Earl of Meath, to whom the celebration is due, is taking time by the forelock. The Earl is desirous that this year the observance of the day shall be on a big scale, and he is circularising the Metropolitan Borough Councils suggesting united action on May 24. In a general way he is desirous that there shall be united demonstrations by the school children and their teachers, and though it is too much to hope that all our local governing bodies will be public-spirited enough to join in, Lord Meath is trusting that the majority will. So far he is receiving very gratifying assurances, and where the municipal authorities refuse to act, private effort will make up for the deficiency.

A Darwinian Campaign.

In connection with the centenary of Darwin's birth, I have heard an item of scientific gossip concerning the branch of his work which most closely concerns the ordinary man. For some time a number of scientific journalists and popular lecturers have been prominently concerned in the Eugenics Society, which demands race improvement 'straightaway by regulation of other people's choice in marriage. It also happens that Dr. Galton, Darwin's great disciple, has endowed an institute in London for inquiry into the part played by heredity in human affairs. The workers in this, led by Professor Karl Pearson, have obtained much solid information, widely different from the proposals of the society, and they now propose to come into the open with a counter-campaign. At the end of the month they begin a series of lectures on such subjects as the marriage of cousins, and my information is that Lord Rosebery may speak at the initial lecture on the State's attitude towards the rearing and marriage of citizens.

F. J. Heron

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UNIVERSITY INTELLIGENCE.

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Professor J. H. Morgan's course on "The Constitutional Systems of the British Colonies," of which the introductory lecture was given on Friday, under the presidency of Lord Fitzmaurice, will be given at University College on Wednesdays, at six o'clock. The next lecture will be on Wednesday.

CAMBRIDGE, MONDAY.

The Burney Prize for 1908 has been awarded to the Rev. John Paul Stewart Riddell Gibson, B.A., late scholar of Sidney-Sussex College. Mr. Gibson also won the Harness Prize in 1907. He graduated in 1906.

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UNIVERSITY INTELLIGENCE.

LONDON, WEDNESDAY.

A meeting of the Senate was held this afternoon, the Vice-Chancellor (Professor M. J. M. Hill) presiding. On the nomination of the Principal, Professor J. B. Bury, Litt.D., F.B.A., Regius Professor of Modern History in the University of Cambridge, was appointed Creighton Lecturer for the year 1909-10. Professor Bury will lecture on "The Constitution of the Later Roman Empire."

A report by Professor Karl Pearson was presented showing the progress of the work of the Francis Galton Laboratory for National Eugenics during the past sixteen months. The Senate voted their cordial thanks to Sir Francis Galton for a further donation of £500 for the maintenance of the laboratory, and recorded their high appreciation of the services rendered by Professor Pearson, under whose supervision the work is carried on. Mr. David Heron and Miss E. M. Elderton were reappointed respectively Galton Research Fellow and Galton Research Scholar for a year from next February.

A joint committee, consisting of representatives of the University and representatives of various working-class organisations, was appointed to advise the Senate, through the University Extension Board, with respect to the higher education of working people. It is intended to develop schemes of study and arrange tutorial classes for working-class students on lines similar to those already adopted by the University of Oxford.

The following Doctorates were conferred: D.Sc. (Economics), Miss Annie Abram, an internal student, of the London School of Economics; D.Sc. in Physiological Chemistry, Mr. Percival Hartley, an internal student, of the Lister Institute of Preventive Medicine; D.Sc. in Geology, Mr. Edward Thomas Mellor, an external student; D.Sc. in Zoology, Mr. John Stephenson, an external student; D.Sc. in Physics, Mr. Walter Makower, an external student; D.Sc. in Physics, Mr. Herbert Stansfield, an external student.

BEDFORD COLLEGE FOR WOMEN.

The Council of Bedford College has made the following appointments: Miss F. C. Johnson, M.A. (Lond.), to be Lecturer in French and head of the department of French; Miss E. Strudwick, M.A. (Lond.), to be Lecturer in Latin and head of the department of Latin; Miss D. Tarrant, Classical Tripos, Cambridge, to be Assistant Lecturer in Classics; Miss F. R. Shields, M.A. (Lond.), to be Assistant in Philosophy; Miss E. M. Spearing, Medical and Modern Language Tripos, Cambridge, to be Assistant in English; Miss A. N. Halket, B.Sc., to be Demonstrator in Botany.

The following scholarships have been awarded: The Reid Scholarship in Arts to Miss Z. M. Downes (Clapham High School); the Old Pupils' Scholarship to Miss E. E. M. Birch (Notting-hill High School); the Pfeiffer Scholarship in Science to Miss W. G. C. Hurst (Streat-ham High School). In the training department: Miss H. B. Harding, B.A. (Wales), scholarship of £20; Miss D. Soothill, Newnham College, Cambridge, Medieval and Modern Languages, Class II., scholarship of £20; Miss M. G. Madell, B.A. (Lond.), Bursary of £10.

The Michaelmas term begins on October 7.

The Gilchrist trustees have generously granted to the Library the sum of £50 to be expended on the classical department; and Professor Carveth Read has made a liberal donation of £20 to the psychological department of the college.

EDINBURGH, WEDNESDAY.

The Curators of Edinburgh University to-day unanimously appointed Mr. Henry Alexis Thomson, M.D., B.Sc., F.R.C.S. (Edinburgh), to be Professor of Surgery, in succession to Professor Chiens, resigned.

The Curators also appointed Mr. John Hepburn Millar, B.A., LL.D., Advocate, of Edinburgh, to be Professor of Constitutional Law and Constitutional History, in succession to Professor Kirkpatrick, resigned.

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UNIVERSITY OF LONDON.

SOME RECENT RESEARCH WORK.

Only the other night the President of the Board of Education went out of his way to praise much of the educational work done by the Livery Companies of the City of London. The value of that work is well exemplified in a report just completed by Professor Karl Pearson, F.R.S., who is head of the Department of Applied Mathematics at University College in the University of London. The report deals with the work done in that department during the last seven years "owing to the grant made by the Worshipful Company of Drapers." In 1903 this Company granted to the University the sum of £1,000 for the furtherance of research at University College, and the University Senate suggested that the grant should be applied for the purpose of assisting the higher work of Professor Karl Pearson's department. This grant may be looked upon as of £2,000 was made by the Company, to be expended at the rate of £400 a year for the next five years, and this Company have just renewed their grant of £2,000. The grant is expended at the rate of £400 a year for the next five years. While it is impossible to distinguish absolutely the work done because of this grant, yet it has admittedly been the "mainstay of the higher work done in the department" during the last seven years. In the routine work for the degrees in science and arts a complete course in the higher teaching of mathematical physics has now been provided, and these lectures have effectively served their purpose of encouraging research work. Much of the best work done by means of the grant has been in the routine work in graphics for the University's engineering degrees. Students trained in this section have contributed as post-graduates to the work done under the grant, and to meet their requirements a special series, Drapers' Company Memoirs, Technical Series, has been instituted. These "memoirs" have been of great practical importance.

BIOLOGICAL INVESTIGATIONS.

In the Biometrical and Statistical Laboratory the Drapers' grant "has been of fundamental aid." Some of the work had special bearing on subjects of executive importance. Thus a report was drawn up on the Scottish Paper Lenny Bains; a report on the variability owing to meteorological conditions of the time taken for the Royal Artillery; and a report on the effect of inoculation against enteric fever in the Army (India and South Africa). At the present time workers in the laboratory are reducing a splendid system of criminal measurements and observations made in His Majesty's prisons. A number of memoirs dealing with biological problems have been issued or are in progress. No. I, gave for the first time a method of measuring the degree of relationship between characters which could not be represented on a quantitative scale. It provided an effective statistical method of dealing with important problems in inheritance and sociology. No. II, extended statistical treatment to a wide class of biological cases in which the change in one character influences a second, but not proportionally; for example, the effect of growth in plants and animals. No. III, was a contribution to the problem of insect migration, having special reference to the practical problem of the destruction of the mosquito in the case of mosquito destruction in anti-malaria campaigns. A "memoir" shortly to be issued deals with Albinism in man.

NATIONAL DEGENERATION.

Another of the research series of publications deals with "Studies in National Degeneration." The object of this series was to study the separate factors as to health, fertility, and inheritance in man which make for national fitness and racial welfare. No. I, of this series dealt with the influence of various social and moral factors on the birth-rate. No. II, dealt with the inheritance of the tuberculous constitution in man and led to the acceptance by more than one sanatorium of heredity schedules and cards of vital statistics. No. III, dealt further with the problem of tuberculosis, considering the question of marital infection in the case of husband or wife being tuberculous; the conclusion drawn being that infection is less important than the existence of a constitutional tendency. No. IV, will be a memoir by Professor Karl Pearson dealing with the health of the school child in relation to its mental characters.

EUGENICS.

In 1907 Mr. Francis Galton founded a laboratory in the University "to study the agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally," and the time and energy which Professor Karl Pearson has been able to give to this work has been largely due to the Drapers' grant having made it possible to provide an additional assistant. The Eugenics Laboratory has now started a memoir series of its own, which deals with investigations bearing directly on racial welfare. This laboratory has also recently undertaken in "The Treasury of Human Inheritance" a work of an extensive character, which is an attempt to bring together in one publication all the hitherto published and much unpublished material bearing on the inheritance of special characters, physical, mental, or pathological, in man. The report deals with other work done by the help of the fund such as the practical teaching of eugenics, and Professor Karl Pearson mentions the present chief needs "of a department which the Company have done so much to develop." These are further aid to the college astronomical equipment, and especially to the research publication fund.

GALTON 2/13/1/20

4 L. Galton

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2-1-09

A WORK entitled the "Treasury of Human Inheritance" is shortly to be issued by the Francis Galton Laboratory for National Eugenics. It will be published under the auspices of the University of London by Messrs. Dulau, and the subscription to each set of four parts will be 20s., or for each part alone 7s. This proposed publication by the Eugenics Laboratory cannot fail to be of the highest value to those interested in general science and in scientific medicine. To have at hand carefully collected pedigrees, in which the recurrence of disease or any other abnormality is shown, will be useful not merely for reference but as a basis for important future deductions. It is also gratifying to note that all controversial matter, involving a discussion of theories, will be avoided, and that the genealogical trees will be explained simply and solely in so far as concerns the facts. We indeed welcome such a decisive step towards the scientific explanation of the vexed question of inheritance.

J. Galton

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THE TIMES,

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FEB 26 1909

LONDON, FEB. 25.

APPOINTMENTS.

Dr. Frederick Taylor has been appointed the representative of the University on the General Medical Council, in the place of Dr. P. H. Pye-Smith, F.R.S., resigned; Professor J. B. Farmer, D.Sc., M.A., F.R.S., has been appointed a member of the council of the John Innes Horticultural Institution; and Sir Philip Magnus, M.P., has been appointed to represent the University at the celebration of the 500th anniversary of the University of Leipzig in July.

Professor F. T. Trouton has been reappointed to the Quain chair of Physics at University College for a further period of seven years.

Mr. David Heron, M.A., and Miss E. M. Elderton have been reappointed respectively Galton Research Fellow and Galton Research Scholar for a further period of one year.

4 Sir P. Galton

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WESTERN MORNING NEWS, PLYMOUTH.

28/6/09

It is not surprising that the word "Eugenics" continues to puzzle inquirers, for it was invented by Sir Francis Galton subsequent to the publication of the popular dictionaries of the day. It stands for a very real and practical science "for the improvement of the race." A laboratory and research fellowship have been founded in connection with the University of London, of which Professor Karl Pearson, F.R.S., has the supervision, and its purpose is to act as a storehouse for statistical material bearing on the "mental and physical conditions in man, and the relations of these conditions to inheritance and environment," and also as a centre for the publication of knowledge thus acquired. Sir Francis Galton is the grandson of Dr. Erasmus Darwin, and though a hale old veteran of over eighty years his interest in anthropology shows no sign of diminishing. He began to win distinction nearly 60 years ago by gaining the gold medal of the Royal Geographical Society, and since then his "trrophies" have been innumerable.

Sir Francis Galton, like many other famous men of science, indulged in exploration in his early days, and improved his great geographical knowledge by journeys through Damaraland. Since then geography and anthropology have shared his affections, and the latter has been his last love. He has written volumes upon "Hereditary genius," laboriously studying the conditions which make men great, and the probability of genius passing from father to son. He is also one of the inventors of the finger print system of identification. Sir F. Galton admits that an immense mass of information concerning many generations of families will have to be collected before the science of sociology can make great strides. Animals, as he has often declared, have received far more study than men, and he wished to readjust the balance.

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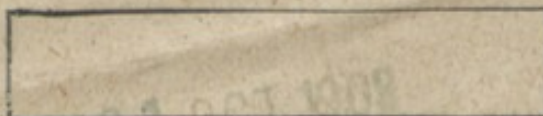
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ANCESTOR-LORE.

INTERESTING INQUIRY INTO TENDENCIES OF HEREDITY.

An interesting contribution to the study of heredity is promised by Prof. Karl Pearson.

He is appealing to medical men and other competent students for assistance towards the "Treasury of Human Inheritance," which is to be issued by the Galton Laboratory of National Eugenics.

This apparently is to be a catalogue of ancestors, with careful scientific notes upon their pedigrees. Each part of the Treasury is to contain from 20 to 50 pedigrees on lithographic plates. "Each plate," says the "British Medical Journal," "is to be devoted to a special characteristic or abnormality, and the pedigrees will be accompanied by a short account of the family and its members, together with, if necessary, an illustration. The work will cover published and unpublished material, full bibliographical references being given. No purely theoretical discussions will be admitted."

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SCIENTIFIC NOTES.

They used to say, only a few years ago, that Mendelism—so named after Gregor Mendel, Abbot of Brunn, who published his work in 1865—applied only to cases of hybridism in plants: that the quite astounding phenomena observed by the Abbot with his peas had no further bearing. Then it was urged that, at any rate, the animal world had no part in these phenomena; and then that, at any rate, they did not apply to man. There was also an elaborate argument about Mendelism as "merely a phenomenon of sex" which I never could make head or tail of. But the last few years have changed all that; and, indeed, even the excellent treatise on Heredity, lately published by Mr. John Murray for Professor J. A. Thomson, must be regarded as quite obsolete in respect of the section devoted to Mendelism; and not least in the author's defence and employment of the word "reversion," for which there is Darwin's authority, but which, at the present day, is best omitted from the vocabulary of science.

Many little works on Mendelism have appeared during the last few years. There is Mr. Punnett's clear account, and a good description of it in Mr. R. H. Lock's recent work; but by far the best existing introduction to the subject is the profound, but brilliantly lucid, lecture delivered by Professor William Bateson, F.R.S., last October, on the inauguration of the Chair of Biology in the University of Cambridge. This has been published by the Cambridge University Press under the title, "The Methods and Scope of Genetics"—by which term Professor Bateson means the experimental study of the physiology of heredity and variation initiated by Mendel more than forty years ago. Mendelism is a very difficult subject, and its expositors usually fail to make it any easier, but Professor Bateson positively succeeds in making the elements of the matter simple. He shows further the lines along which future inquiry must run, and makes a deeply significant remark about arranging an intimate and enduring partnership between the students of heredity and the physiological chemists. It will be in terms of ferments, the lecturer foresees, that we shall explain the influence of the germ-cell constitution upon the future organism.

One really must quote a paragraph which tersely expresses the real meanings which we must attach to two familiar terms if they are to be used at all:—

For the first time *Variation* and *Reversion* have a concrete, palpable meaning. Hitherto they have stood by in all evolutionary debates, convenient genii, ready to perform as little or as much as might be desired by the conjuror. That vaporous stage of their existence is over; and we see *Variation* shaping itself as a definite, physiological event, the addition or omission of one or more definite elements; and *Reversion* as that particular addition or subtraction which brings the total of the elements back to something it had been before in the history of the race.

For instance, we can now understand the remarkable case studied by Darwin, where the crossing of fancy pigeons produces the blue-rock ancestor of ages before. The crossing has meant the concurrence after long separation of certain elements in the germ-cells, which determine the blue colour, etc., and which were associated in the original pigeon.

The point is to be insisted upon because the word reversion is often applied to the case of the feeble-minded, so-called Mongolian idiots and the like. In any case neither the anthropoid apes nor the yellow races are feeble-minded: nor are either of them in our own ancestry. These so-called "reversions" are, I believe, nothing of the sort, but vitiations or, if you like, diversions. There never was any excuse for the common use of the word reversion in this connection: it sounds learned, and naming saves a deal of thinking, as Mr. Meredith puts it: but there is now no excuse at all, since the Mendelians have taught us what reversion really is.

Last week reference was made to Mr. Francis Galton's celebrated law of ancestral inheritance, which declares that we and living creatures in general owe one-fourth of our characters to each parent, one-eighth to each grandparent, and so on: and it was suggested that this principle is of very doubtful validity in the light of general Mendelian knowledge. I see now from a note in "Nature" of last Thursday that Mr. A. D. Darbishire has just completed an experimental investigation specially designed to decide this question. Working with peas on a very large scale, he has obtained results which do not at all bear out the theory of ancestral conditions. I have little doubt that further inquiry will yield the same.

It is pleasant to feel, whilst writing this, that Mr. Galton's serious study of heredity are so immense that those who honour him can view new inquiry without dismay.

C. W. S.