

A photograph of a young man and woman kissing in a park. The man is on the left, wearing a grey jacket over a white shirt. The woman is on the right, wearing a grey sweater and glasses. They are surrounded by falling yellow leaves. The background shows trees with yellow leaves and a paved path.

**GRANT  
ALLEN**

***FALLING  
IN LOVE; WITH  
OTHER ESSAYS  
ON MORE EXACT  
BRANCHES  
OF SCIENCE***

**Grant Allen**

# **Falling in Love; With Other Essays on More Exact Branches of Science**

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# PREFACE

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Some people complain that science is dry. That is, of course, a matter of taste. For my own part, I like my science and my champagne as dry as I can get them. But the public thinks otherwise. So I have ventured to sweeten accompanying samples as far as possible to suit the demand, and trust they will meet with the approbation of consumers.

Of the specimens here selected for exhibition, my title piece originally appeared in the *Fortnightly Review*: '[Honey Dew](#)' and '[The First Potter](#)' were contributions to *Longman's Magazine*: and all the rest found friendly shelter between the familiar yellow covers of the good old *Cornhill*. My thanks are due to the proprietors and editors of those various periodicals for kind permission to reproduce them here.

G.A.

THE NOOK, DORKING:  
*September, 1889.*

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# FALLING IN LOVE

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An ancient and famous human institution is in pressing danger. Sir George Campbell has set his face against the time-honoured practice of Falling in Love. Parents innumerable, it is true, have set their faces against it

already from immemorial antiquity; but then they only attacked the particular instance, without venturing to impugn the institution itself on general principles. An old Indian administrator, however, goes to work in all things on a different pattern. He would always like to regulate human life generally as a department of the India Office; and so Sir George Campbell would fain have husbands and wives selected for one another (perhaps on Dr. Johnson's principle, by the Lord Chancellor) with a view to the future development of the race, in the process which he not very felicitously or elegantly describes as 'man-breeding.' 'Probably,' he says, as reported in *Nature*, 'we have enough physiological knowledge to effect a vast improvement in the pairing of individuals of the same or allied races if we could only apply that knowledge to make fitting marriages, instead of giving way to foolish ideas about love and the tastes of young people, whom we can hardly trust to choose their own bonnets, much less to choose in a graver matter in which they are most likely to be influenced by frivolous prejudices.' He wants us, in other words, to discard the deep-seated inner physiological promptings of inherited instinct, and to substitute for them some calm and dispassionate but artificial selection of a fitting partner as the father or mother of future generations.

Now this is of course a serious subject, and it ought to be treated seriously and reverently. But, it seems to me, Sir George Campbell's conclusion is exactly the opposite one from the conclusion now being forced upon men of science by a study of the biological and psychological elements in this very complex problem of heredity. So far from

considering love as a 'foolish idea,' opposed to the best interests of the race, I believe most competent physiologists and psychologists, especially those of the modern evolutionary school, would regard it rather as an essentially beneficent and conservative instinct developed and maintained in us by natural causes, for the very purpose of insuring just those precise advantages and improvements which Sir George Campbell thinks he could himself effect by a conscious and deliberate process of selection. More than that, I believe, for my own part (and I feel sure most evolutionists would cordially agree with me), that this beneficent inherited instinct of Falling in Love effects the object it has in view far more admirably, subtly, and satisfactorily, on the average of instances, than any clumsy human selective substitute could possibly effect it.

In short, my doctrine is simply the old-fashioned and confiding belief that marriages are made in heaven: with the further corollary that heaven manages them, one time with another, a great deal better than Sir George Campbell.

Let us first look how Falling in Love affects the standard of human efficiency; and then let us consider what would be the probable result of any definite conscious attempt to substitute for it some more deliberate external agency.

Falling in Love, as modern biology teaches us to believe, is nothing more than the latest, highest, and most involved exemplification, in the human race, of that almost universal selective process which Mr. Darwin has enabled us to recognise throughout the whole long series of the animal kingdom. The butterfly that circles and eddies in his aërial dance around his observant mate is endeavouring to charm

her by the delicacy of his colouring, and to overcome her coyness by the display of his skill. The peacock that struts about in imperial pride under the eyes of his attentive hens, is really contributing to the future beauty and strength of his race by collecting to himself a harem through whom he hands down to posterity the valuable qualities which have gained the admiration of his mates in his own person. Mr. Wallace has shown that to be beautiful is to be efficient; and sexual selection is thus, as it were, a mere lateral form of natural selection—a survival of the fittest in the guise of mutual attractiveness and mutual adaptability, producing on the average a maximum of the best properties of the race in the resulting offspring. I need not dwell here upon this aspect of the case, because it is one with which, since the publication of the 'Descent of Man,' all the world has been sufficiently familiar.

In our own species, the selective process is marked by all the features common to selection throughout the whole animal kingdom; but it is also, as might be expected, far more specialised, far more individualised, far more cognisant of personal traits and minor peculiarities. It is furthermore exerted to a far greater extent upon mental and moral as well as physical peculiarities in the individual.

We cannot fall in love with everybody alike. Some of us fall in love with one person, some with another. This instinctive and deep-seated differential feeling we may regard as the outcome of complementary features, mental, moral, or physical, in the two persons concerned; and experience shows us that, in nine cases out of ten, it is a reciprocal affection, that is to say, in other words, an

affection roused in unison by varying qualities in the respective individuals.

Of its eminently conservative and even upward tendency very little doubt can be reasonably entertained. We *do* fall in love, taking us in the lump, with the young, the beautiful, the strong, and the healthy; we do *not* fall in love, taking us in the lump, with the aged, the ugly, the feeble, and the sickly. The prohibition of the Church is scarcely needed to prevent a man from marrying his grandmother. Moralists have always borne a special grudge to pretty faces; but, as Mr. Herbert Spencer admirably put it (long before the appearance of Darwin's selective theory), 'the saying that beauty is but skin-deep is itself but a skin-deep saying.' In reality, beauty is one of the very best guides we can possibly have to the desirability, so far as race-preservation is concerned, of any man or any woman as a partner in marriage. A fine form, a good figure, a beautiful bust, a round arm and neck, a fresh complexion, a lovely face, are all outward and visible signs of the physical qualities that on the whole conspire to make up a healthy and vigorous wife and mother; they imply soundness, fertility, a good circulation, a good digestion. Conversely, sallowness and paleness are roughly indicative of dyspepsia and anæmia; a flat chest is a symptom of deficient maternity; and what we call a bad figure is really, in one way or another, an unhealthy departure from the central norma and standard of the race. Good teeth mean good deglutition; a clear eye means an active liver; scrubbiness and undersizedness mean feeble virility. Nor are indications of mental and moral efficiency by any means wanting as recognised elements in



personal beauty. A good-humoured face is in itself almost pretty. A pleasant smile half redeems unattractive features. Low, receding foreheads strike us unfavourably. Heavy, stolid, half-idiotic countenances can never be beautiful, however regular their lines and contours. Intelligence and goodness are almost as necessary as health and vigour in order to make up our perfect ideal of a beautiful human face and figure. The Apollo Belvedere is no fool; the murderers in the Chamber of Horrors at Madame Tussaud's are for the most part no beauties.

What we all fall in love with, then, as a race, is in most cases efficiency and ability. What we each fall in love with individually is, I believe, our moral, mental, and physical complement. Not our like, not our counterpart; quite the contrary; within healthy limits, our unlike and our opposite. That this is so has long been more or less a commonplace of ordinary conversation; that it is scientifically true, one time with another, when we take an extended range of cases, may, I think, be almost demonstrated by sure and certain warranty of human nature.

Brothers and sisters have more in common, mentally and physically, than any other members of the same race can possibly have with one another. But nobody falls in love with his sister. A profound instinct has taught even the lower races of men (for the most part) to avoid such union of the all-but-identical. In the higher races the idea never so much as occurs to us. Even cousins seldom fall in love—seldom, that is to say, in comparison with the frequent opportunities of intercourse they enjoy, relatively to the remainder of general society. When they do, and when they carry out

their perilous choice effectively by marriage, natural selection soon avenges Nature upon the offspring by cutting off the idiots, the consumptives, the weaklings, and the cripples, who often result from such consanguineous marriages. In narrow communities, where breeding in-and-in becomes almost inevitable, natural selection has similarly to exert itself upon a crowd of *crétins* and other hapless incapables. But in wide and open champaign countries, where individual choice has free room for exercise, men and women as a rule (if not constrained by parents and moralists) marry for love, and marry on the whole their natural complements. They prefer outsiders, fresh blood, somebody who comes from beyond the community, to the people of their own immediate surroundings. In many men the dislike to marrying among the folk with whom they have been brought up amounts almost to a positive instinct; they feel it as impossible to fall in love with a fellow-townswoman as to fall in love with their own first cousins. Among exogamous tribes such an instinct (aided, of course, by other extraneous causes) has hardened into custom; and there is reason to believe (from the universal traces among the higher civilisations of marriage by capture) that all the leading races of the world are ultimately derived from exogamous ancestors, possessing this healthy and excellent sentiment.

In minor matters, it is of course universally admitted that short men, as a rule, prefer tall women, while tall men admire little women. Dark pairs by preference with fair; the commonplace often runs after the original. People have long noticed that this attraction towards one's opposite tends to

keep true the standard of the race; they have not, perhaps, so generally observed that it also indicates roughly the existence in either individual of a desire for its own natural complement. It is difficult here to give definite examples, but everybody knows how, in the subtle psychology of Falling in Love, there are involved innumerable minor elements, physical and mental, which strike us exactly because of their absolute adaptation to form with ourselves an adequate union. Of course we do not definitely seek out and discover such qualities; instinct works far more intuitively than that; but we find at last, by subsequent observation, how true and how trustworthy were its immediate indications. That is to say, those men do so who were wise enough or fortunate enough to follow the earliest promptings of their own hearts, and not to be ashamed of that divinest and deepest of human intuitions, love at first sight.

How very subtle this intuition is, we can only guess in part by the apparent capriciousness and incomprehensibility of its occasional action. We know that some men and women fall in love easily, while others are only moved to love by some very special and singular combination of peculiarities. We know that one man is readily stirred by every pretty face he sees, while another man can only be roused by intellectual qualities or by moral beauty. We know that sometimes we meet people possessing every virtue and grace under heaven, and yet for some unknown and incomprehensible reason we could no more fall in love with them than we could fall in love with the Ten Commandments. I don't, of course, for a moment accept the

silly romantic notion that men and women fall in love only once in their lives, or that each one of us has somewhere on earth his or her exact affinity, whom we must sooner or later meet or else die unsatisfied. Almost every healthy normal man or woman has probably fallen in love over and over again in the course of a lifetime (except in case of very early marriage), and could easily find dozens of persons with whom they would be capable of falling in love again if due occasion offered. We are not all created in pairs, like the Exchequer tallies, exactly intended to fit into one another's minor idiosyncrasies. Men and women as a rule very sensibly fall in love with one another in the particular places and the particular societies they happen to be cast among. A man at Ashby-de-la-Zouch does not hunt the world over to find his pre-established harmony at Paray-le-Monial or at Denver, Colorado. But among the women he actually meets, a vast number are purely indifferent to him; only one or two, here and there, strike him in the light of possible wives, and only one in the last resort (outside Salt Lake City) approves herself to his inmost nature as the actual wife of his final selection.

Now this very indifference to the vast mass of our fellow-countrymen or fellow-countrywomen, this extreme pitch of selective preference in the human species, is just one mark of our extraordinary specialisation, one stamp and token of our high supremacy. The brutes do not so pick and choose, though even there, as Darwin has shown, selection plays a large part (for the very butterflies are coy, and must be wooed and won). It is only in the human race itself that selection descends into such minute, such subtle, such

indefinable discriminations. Why should a universal and common impulse have in our case these special limits? Why should we be by nature so fastidious and so diversely affected? Surely for some good and sufficient purpose. No deep-seated want of our complex life would be so narrowly restricted without a law and a meaning. Sometimes we can in part explain its conditions. Here, we see that beauty plays a great *rôle*; there, we recognise the importance of strength, of manner, of grace, of moral qualities. Vivacity, as Mr. Galton justly remarks, is one of the most powerful among human attractions, and often accounts for what might otherwise seem unaccountable preferences. But after all is said and done, there remains a vast mass of instinctive and inexplicable elements: a power deeper and more marvellous in its inscrutable ramifications than human consciousness. 'What on earth,' we say, 'could So-and-so see in So-and-so to fall in love with?' This very inexplicability I take to be the sign and seal of a profound importance. An instinct so conditioned, so curious, so vague, so unfathomable, as we may guess by analogy with all other instincts, must be Nature's guiding voice within us, speaking for the good of the human race in all future generations.

On the other hand, let us suppose for a moment (impossible supposition!) that mankind could conceivably divest itself of 'these foolish ideas about love and the tastes of young people,' and could hand over the choice of partners for life to a committee of anthropologists, presided over by Sir George Campbell. Would the committee manage things, I wonder, very much better than the Creator has managed them? Where would they obtain that intimate

knowledge of individual structures and functions and differences which would enable them to join together in holy matrimony fitting and complementary idiosyncrasies? Is a living man, with all his organs, and powers, and faculties, and dispositions, so simple and easy a problem to read that anybody else can readily undertake to pick out off-hand a help meet for him? I trow not! A man is not a horse or a terrier. You cannot discern his 'points' by simple inspection. You cannot see *à priori* why a Hanoverian bandsman and his heavy, ignorant, uncultured wife, should conspire to produce a Sir William Herschel. If you tried to improve the breed artificially, either by choice from outside, or by the creation of an independent moral sentiment, irrespective of that instinctive preference which we call Falling in Love, I believe that so far from improving man, you would only do one of two things—either spoil his constitution, or produce a tame stereotyped pattern of amiable imbecility. You would crush out all initiative, all spontaneity, all diversity, all originality; you would get an animated moral code instead of living men and women.

Look at the analogy of domestic animals. That is the analogy to which breeding reformers always point with special pride: but what does it really teach us? That you can't improve the efficiency of animals in any one point to any high degree, without upsetting the general balance of their constitution. The race-horse can run a mile on a particular day at a particular place, bar accidents, with wonderful speed: but that is about all he is good for. His health as a whole is so surprisingly feeble that he has to be treated with as much care as a delicate exotic. 'In regard to

animals and plants,' says Sir George Campbell, 'we have very largely mastered the principles of heredity and culture, and the modes by which good qualities may be maximised, bad qualities minimised.' True, so far as concerns a few points prized by ourselves for our own purposes. But in doing this, we have so lowered the general constitutional vigour of the plants or animals that our vines fall an easy prey to oidium and phylloxera, our potatoes to the potato disease and the Colorado beetle; our sheep are stupid, our rabbits idiotic, our domestic breeds generally threatened with dangers to life and limb unknown to their wiry ancestors in the wild state. And when one comes to deal with the infinitely more complex individuality of man, what hope would there be of our improving the breed by deliberate selection? If we developed the intellect, we would probably stunt the physique or the moral nature; if we aimed at a general culture of all faculties alike, we would probably end by a Chinese uniformity of mediocre dead level.

The balance of organs and faculties in a race is a very delicate organic equilibrium. How delicate we now know from thousands of examples, from the correlations of seemingly unlike parts, from the wide-spread effects of small conditions, from the utter dying out of races like the Tasmanians or the Paraguay Indians under circumstances different from those with which their ancestors were familiar. What folly to interfere with a marvellous instinct which now preserves this balance intact, in favour of an untried artificial system which would probably wreck it as helplessly as the modern system of higher education for

women is wrecking the maternal powers of the best class in our English community!

Indeed, within the race itself, as it now exists, free choice, aided by natural selection, is actually improving every good point, and is for ever weeding out all the occasional failures and shortcomings of nature. For weakly children, feeble children, stupid children, heavy children, are undoubtedly born under this very régime of falling in love, whose average results I believe to be so highly beneficial. How is this? Well, one has to take into consideration two points in seeking for the solution of that obvious problem.

In the first place, no instinct is absolutely perfect. All of them necessarily fail at some points. If on the average they do good, they are sufficiently justified. Now the material with which you have to start in this case is not perfect. Each man marries, even in favourable circumstances, not the abstractly best adapted woman in the world to supplement or counteract his individual peculiarities, but the best woman then and there obtainable for him. The result is frequently far from perfect; all I claim is that it would be as bad or a good deal worse if somebody else made the choice for him, or if he made the choice himself on abstract biological and 'eugenic' principles. And, indeed, the very existence of better and worse in the world is a condition precedent of all upward evolution. Without an overstocked world, with individual variations, some progressive, some retrograde, there could be no natural selection, no survival of the fittest. That is the chief besetting danger of cut-and-dried doctrinaire views. Malthus was a very great man; but if his principle of prudential restraint were fully carried out,



the prudent would cease to reproduce their like, and the world would be peopled in a few generations by the hereditarily reckless and dissolute and imprudent. Even so, if eugenic principles were universally adopted, the chance of exceptional and elevated natures would be largely reduced, and natural selection would be in so much interfered with or sensibly retarded.

In the second place, again, it must not be forgotten that falling in love has never yet, among civilised men at least, had a fair field and no favour. Many marriages are arranged on very different grounds—grounds of convenience, grounds of cupidity, grounds of religion, grounds of snobbishness. In many cases it is clearly demonstrable that such marriages are productive in the highest degree of evil consequences. Take the case of heiresses. An heiress is almost by necessity the one last feeble and flickering relic of a moribund stock—often of a stock reduced by the sordid pursuit of ill-gotten wealth almost to the very verge of actual insanity. But let her be ever so ugly, ever so unhealthy, ever so hysterical, ever so mad, somebody or other will be ready and eager to marry her on any terms. Considerations of this sort have helped to stock the world with many feeble and unhealthy persons. Among the middle and upper classes it may be safely said only a very small percentage of marriages is ever due to love alone; in other words, to instinctive feeling. The remainder have been influenced by various side advantages, and nature has taken her vengeance accordingly on the unhappy offspring. Parents and moralists are ever ready to drown her voice, and to counsel marriage within one's own class, among nice people, with a really

religious girl, and so forth *ad infinitum*. By many well-meaning young people these deadly interferences with natural impulse are accepted as part of a higher and nobler law of conduct. The wretched belief that one should subordinate the promptings of one's own soul to the dictates of a miscalculating and misdirecting prudence has been instilled into the minds of girls especially, until at last many of them have almost come to look upon their natural instincts as wrong, and the immoral, race-destructive counsels of their seniors or advisers as the truest and purest earthly wisdom. Among certain small religious sects, again, such as the Quakers, the duty of 'marrying in' has been strenuously inculcated, and only the stronger-minded and more individualistic members have had courage and initiative enough to disregard precedent, and to follow the internal divine monitor, as against the externally-imposed law of their particular community. Even among wider bodies it is commonly held that Catholics must not marry Protestants; and the admirable results obtained by the mixture of Jewish with European blood have almost all been reached by male Jews having the temerity to marry 'Christian' women in the face of opposition and persecution from their co-nationalists. It is very rarely indeed that a Jewess will accept a European for a husband. In so many ways, and on so many grounds, does convention interfere with the plain and evident dictates of nature.

Against all such evil parental promptings, however, a great safeguard is afforded to society by the wholesome and essentially philosophical teaching of romance and poetry. I do not approve of novels. They are for the most part a futile

and unprofitable form of literature; and it may profoundly be regretted that the mere blind laws of supply and demand should have diverted such an immense number of the ablest minds in England, France, and America, from more serious subjects to the production of such very frivolous and, on the whole, ephemeral works of art. But the novel has this one great counterpoise of undoubted good to set against all the manifold disadvantages and shortcomings of romantic literature—that it always appeals to the true internal promptings of inherited instinct, and opposes the foolish and selfish suggestions of interested outsiders. It is the perpetual protest of poor banished human nature against the expelling pitchfork of calculating expediency in the matrimonial market. While parents and moralists are for ever saying, 'Don't marry for beauty; don't marry for inclination; don't marry for love: marry for money, marry for social position, marry for advancement, marry for our convenience, not for your own,' the romance-writer is for ever urging, on the other hand, 'Marry for love, and for love only.' His great theme in all ages has been the opposition between parental or other external wishes and the true promptings of the young and unsophisticated human heart. He has been the chief ally of sentiment and of nature. He has filled the heads of all our girls with what Sir George Campbell describes off-hand as 'foolish ideas about love.' He has preserved us from the hateful conventions of civilisation. He has exalted the claims of personal attraction, of the mysterious native yearning of heart for heart, of the indefinite and indescribable element of mutual selection; and, in so doing, he has unconsciously proved himself the

best friend of human improvement and the deadliest enemy of all those hideous 'social lies which warp us from the living truth.' His mission is to deliver the world from Dr. Johnson and Sir George Campbell.

For, strange to say, it is the moralists and the doctrinaires who are always in the wrong: it is the sentimentalists and the rebels who are always in the right in this matter. If the common moral maxims of society could have had their way—if we had all chosen our wives and our husbands, not for their beauty or their manliness, not for their eyes or their moustaches, not for their attractiveness or their vivacity, but for their 'sterling qualities of mind and character,' we should now doubtless be a miserable race of prigs and bookworms, of martinets and puritans, of nervous invalids and feeble idiots. It is because our young men and maidens will not hearken to these penny-wise apophthegms of shallow sophistry—because they often prefer *Romeo and Juliet* to the 'Whole Duty of Man,' and a beautiful face to a round balance at Coutts's—that we still preserve some vitality and some individual features, in spite of our grinding and crushing civilisation. The men who marry balances, as Mr. Galton has shown, happily die out, leaving none to represent them: the men who marry women they have been weak enough and silly enough to fall in love with, recruit the race with fine and vigorous and intelligent children, fortunately compounded of the complementary traits derived from two fairly contrasted and mutually reinforcing individualities.

I have spoken throughout, for argument's sake, as though the only interest to be considered in the married

relation were the interests of the offspring, and so ultimately of the race at large, rather than of the persons themselves who enter into it. But I do not quite see why each generation should thus be sacrificed to the welfare of the generations that afterwards succeed it. Now it is one of the strongest points in favour of the system of falling in love that it does, by common experience in the vast majority of instances, assort together persons who subsequently prove themselves thoroughly congenial and helpful to one another. And this result I look upon as one great proof of the real value and importance of the instinct. Most men and women select for themselves partners for life at an age when they know but little of the world, when they judge but superficially of characters and motives, when they still make many mistakes in the conduct of life and in the estimation of chances. Yet most of them find in after days that they have really chosen out of all the world one of the persons best adapted by native idiosyncrasy to make their joint lives enjoyable and useful. I make every allowance for the effects of habit, for the growth of sentiment, for the gradual approximation of tastes and sympathies; but surely, even so, it is a common consciousness with every one of us who has been long married, that we could hardly conceivably have made ourselves happy with any of the partners whom others have chosen; and that we have actually made ourselves so with the partners we chose for ourselves under the guidance of an almost unerring native instinct. Yet adaptation between husband and wife, so far as their own happiness is concerned, can have had comparatively little to do with the evolution of the instinct, as compared with

adaptation for the joint production of vigorous and successful offspring. Natural selection lays almost all the stress on the last point, and hardly any at all upon the first one. If, then, the instinct is found on the whole so trustworthy in the minor matter, for which it has not specially been fashioned, how far more trustworthy and valuable must it probably prove in the greater matter—greater, I mean, as regards the interests of the race—for which it has been mainly or almost solely developed!

I do not doubt that, as the world goes on, a deeper sense of moral responsibility in the matter of marriage will grow up among us. But it will not take the false direction of ignoring these our profoundest and holiest instincts. Marriage for money may go; marriage for rank may go; marriage for position may go; but marriage for love, I believe and trust, will last for ever. Men in the future will probably feel that a union with their cousins or near relations is positively wicked; that a union with those too like them in person or disposition is at least undesirable; that a union based upon considerations of wealth or any other consideration save considerations of immediate natural impulse, is base and disgraceful. But to the end of time they will continue to feel, in spite of doctrinaires, that the voice of nature is better far than the voice of the Lord Chancellor or the Royal Society; and that the instinctive desire for a particular helpmate is a surer guide for the ultimate happiness, both of the race and of the individual, than any amount of deliberate consultation. It is not the foolish fancies of youth that will have to be got rid of, but the foolish, wicked, and mischievous interference of parents or outsiders.

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# RIGHT AND LEFT

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Adult man is the only animal who, in the familiar scriptural phrase, 'knoweth the right hand from the left.' This fact in his economy goes closely together with the other facts, that he is the only animal on this sublunary planet who habitually uses a knife and fork, articulate language, the art of cookery, the common pump, and the musical glasses. His right-handedness, in short, is part cause and part effect of his universal supremacy in animated nature. He is what he is, to a great extent, 'by his own right hand;' and his own right hand, we may shrewdly suspect, would never have differed at all from his left were it not for the manifold arts and trades and activities he practises.

It was not always so, when wild in woods the noble savage ran. Man was once, in his childhood on earth, what Charles Reade wanted him again to be in his maturer centuries, ambidextrous. And lest any lady readers of this volume—in the Cape of Good Hope, for example, or the remoter portions of the Australian bush, whither the culture of Girton and the familiar knowledge of the Latin language have not yet penetrated—should complain that I speak with unknown tongues, I will further explain for their special benefit that ambidextrous means equally-handed, using the right and the left indiscriminately. This, as Mr. Andrew Lang remarks in immortal verse, 'was the manner of Primitive Man.' He never minded twopence which hand he used, as long as he got the fruit or the scalp he wanted. How could he when twopence wasn't yet invented? His mamma never

said to him in early youth, 'Why-why,' or 'Tomtom,' as the case might be, 'that's the wrong hand to hold your flint-scraper in.' He grew up to man's estate in happy ignorance of such minute and invidious distinctions between his anterior extremities. Enough for him that his hands could grasp the forest boughs or chip the stone into shapely arrows; and he never even thought in his innocent soul which particular hand he did it with.

How can I make this confident assertion, you ask, about a gentleman whom I never personally saw, and whose habits the intervention of five hundred centuries has precluded me from studying at close quarters? At first sight, you would suppose the evidence on such a point must be purely negative. The reconstructive historian must surely be inventing *à priori* facts, evolved, *more Germanico*, from his inner consciousness. Not so. See how clever modern archæology has become! I base my assertion upon solid evidence. I know that Primitive Man was ambidextrous, because he wrote and painted just as often with his left as with his right, and just as successfully.

This seems once more a hazardous statement to make about a remote ancestor, in the age before the great glacial epoch had furrowed the mountains of Northern Europe; but, nevertheless, it is strictly true and strictly demonstrable. Just try, as you read, to draw with the forefinger and thumb of your right hand an imaginary human profile on the page on which these words are printed. Do you observe that (unless you are an artist, and therefore sophisticated) you naturally and instinctively draw it with the face turned towards your left shoulder? Try now to draw it with the



profile to the right, and you will find it requires a far greater effort of the thumb and fingers. The hand moves of its own accord from without inward, not from within outward. Then, again, draw with your left thumb and forefinger another imaginary profile, and you will find, for the same reason, that the face in this case looks rightward. Existing savages, and our own young children, whenever they draw a figure in profile, be it of man or beast, with their right hand, draw it almost always with the face or head turned to the left, in accordance with this natural human instinct. Their doing so is a test of their perfect right-handedness.

But Primitive Man, or at any rate the most primitive men we know personally, the carvers of the figures from the French bone-caves, drew men and beasts, on bone or mammoth-tusk, turned either way indiscriminately. The inference is obvious. They must have been ambidextrous. Only ambidextrous people draw so at the present day; and indeed to scrape a figure otherwise with a sharp flint on a piece of bone or tooth or mammoth-tusk would, even for a practised hand, be comparatively difficult.

I have begun my consideration of rights and lefts with this one very clear historical datum, because it is interesting to be able to say with tolerable certainty that there really was a period in our life as a species when man in the lump was ambidextrous. Why and how did he become otherwise? This question is not only of importance in itself, as helping to explain the origin and source of man's supremacy in nature—his tool-using faculty—but it is also of interest from the light it casts on that fallacy of poor Charles Reade's already alluded to—that we ought all of us in this respect to

hark back to the condition of savages. I think when we have seen the reasons which make civilised man now right-handed, we shall also see why it would be highly undesirable for him to return, after so many ages of practice, to the condition of his undeveloped stone-age ancestors.

The very beginning of our modern right-handedness goes back, indeed, to the most primitive savagery. Why did one hand ever come to be different in use and function from another? The answer is, because man, in spite of all appearances to the contrary, is really one-sided. Externally, indeed, his congenital one-sidedness doesn't show: but it shows internally. We all of us know, in spite of Sganarelle's assertion to the contrary, that the apex of the heart inclines to the left side, and that the liver and other internal organs show a generous disregard for strict and formal symmetry. In this irregular distribution of those human organs which polite society agrees to ignore, we get the clue to the irregularity of right and left in the human arm, and finally even the particular direction of the printed letters now before you.

For primitive man did not belong to polite society. His manners were strikingly deficient in that repose which stamps the caste of Vere de Vere. When primitive man felt the tender passion steal over his soul, he lay in wait in the hush for the Phyllis or Daphne whose charms had inspired his heart with young desire; and when she passed his hiding-place, in maiden meditation, fancy free, he felled her with a club, caught her tight by the hair of her head, and dragged her off in triumph to his cave or his rock-shelter.

(Marriage by capture, the learned call this simple mode of primeval courtship.) When he found some Strephon or Damoetas rival him in the affections of the dusky sex, he and that rival fought the matter out like two bulls in a field; and the victor and his Phyllis supped that evening off the roasted remains of the vanquished suitor. I don't say these habits and manners were pretty; but they were the custom of the time, and there's no good denying them.

Now, Primitive Man, being thus by nature a fighting animal, fought for the most part at first with his great canine teeth, his nails, and his fists; till in process of time he added to these early and natural weapons the further persuasions of a club or shillelagh. He also fought, as Darwin has very conclusively shown, in the main for the possession of the ladies of his kind, against other members of his own sex and species. And if you fight, you soon learn to protect the most exposed and vulnerable portion of your body; or, if you don't, natural selection manages it for you, by killing you off as an immediate consequence. To the boxer, wrestler, or hand-to-hand combatant, that most vulnerable portion is undoubtedly the heart. A hard blow, well delivered on the left breast, will easily kill, or at any rate stun, even a very strong man. Hence, from a very early period, men have used the right hand to fight with, and have employed the left arm chiefly to cover the heart and to parry a blow aimed at that specially vulnerable region. And when weapons of offence and defence supersede mere fists and teeth, it is the right hand that grasps the spear or sword, while the left holds over the heart for defence the shield or buckler.

From this simple origin, then, the whole vast difference of right and left in civilised life takes its beginning. At first, no doubt, the superiority of the right hand was only felt in the matter of fighting. But that alone gave it a distinct pull, and paved the way, at last, for its supremacy elsewhere. For when weapons came into use, the habitual employment of the right hand to grasp the spear, sword, or knife made the nerves and muscles of the right side far more obedient to the control of the will than those of the left. The dexterity thus acquired by the right—see how the very word 'dexterity' implies this fact—made it more natural for the early hunter and artificer to employ the same hand preferentially in the manufacture of flint hatchets, bows and arrows, and in all the other manifold activities of savage life. It was the hand with which he grasped his weapon; it was therefore the hand with which he chipped it. To the very end, however, the right hand remains especially 'the hand in which you hold your knife;' and that is exactly how our own children to this day decide the question which is which, when they begin to know their right hand from their left for practical purposes.

A difference like this, once set up, implies thereafter innumerable other differences which naturally flow from it. Some of them are extremely remote and derivative. Take, for example, the case of writing and printing. Why do these run from left to right? At first sight such a practice seems clearly contrary to the instinctive tendency I noticed above—the tendency to draw from right to left, in accordance with the natural sweep of the hand and arm. And, indeed, it is a fact that all early writing habitually took the opposite

direction from that which is now universal in western countries. Every schoolboy knows, for instance (or at least he would if he came up to the proper Macaulay standard), that Hebrew is written from right to left, and that each book begins at the wrong cover. The reason is that words, and letters, and hieroglyphics were originally carved, scratched, or incised, instead of being written with coloured ink, and the hand was thus allowed to follow its natural bent, and to proceed, as we all do in naïve drawing, with a free curve from the right leftward.

Nevertheless, the very same fact—that we use the right hand alone in writing—made the letters run the opposite way in the end; and the change was due to the use of ink and other pigments for staining papyrus, parchment, or paper. If the hand in this case moved from right to left it would of course smear what it had already written; and to prevent such untidy smudging of the words, the order of writing was reversed from left rightward. The use of wax tablets also, no doubt, helped forward the revolution, for in this case, too, the hand would cover and rub out the words written.

The strict dependence of writing, indeed, upon the material employed is nowhere better shown than in the case of the Assyrian cuneiform inscriptions. The ordinary substitute for cream-laid note in the Euphrates valley in its palmy days was a clay or terra-cotta tablet, on which the words to be recorded—usually a deed of sale or something of the sort—were impressed while it was wet and then baked in, solid. And the method of impressing them was very simple; the workman merely pressed the end of his

graver or wedge into the moist clay, thus giving rise to triangular marks which were arranged in the shapes of various letters. When alabaster, or any other hard material, was substituted for clay, the sculptor imitated these natural dabs or triangular imprints; and that was the origin of those mysterious and very learned-looking cuneiforms. This, I admit, is a palpable digression; but inasmuch as it throws an indirect light on the simple reasons which sometimes bring about great results, I hold it not wholly alien to the present serious philosophical inquiry.

Printing, in turn, necessarily follows the rule of writing, so that in fact the order of letters and words on this page depends ultimately upon the remote fact that primitive man had to use his right hand to deliver a blow, and his left to parry, or to guard his heart.

Some curious and hardly noticeable results flow once more from this order of writing from left to right. You will find, if you watch yourself closely, that in examining a landscape, or the view from a hill-top, your eye naturally ranges from left to right; and that you begin your survey, as you would begin reading a page of print, from the left-hand corner. Apparently, the now almost instinctive act of reading (for Dogberry was right after all, for the civilised infant) has accustomed our eyes to this particular movement, and has made it especially natural when we are trying to 'read' or take in at a glance the meaning of any complex and varied total.

In the matter of pictures, I notice, the correlation has even gone a step farther. Not only do we usually take in the episodes of a painting from left to right, but the painter