

CHAPTER II

THE ANCESTRY OF FRANCIS GALTON

It is only fitting that an early chapter of the life of Francis Galton should be devoted to some account of the ancestry of a man, who did so much to make the world at large appreciate the value of a good series of forbears. To some it may seem that Francis Galton in his *Memories* may have said all that is needful on the point of ancestry; to others the mere statement that he was a grandson of Erasmus Darwin and a half-cousin to Charles Darwin may appear to account for his ability and for the directions of his scientific work. To a third group of persons, which has been much in evidence of late, the doctrine that mental characters are inherited appears to be not only absurd, but a sign of mental depravity in its upholders; they would probably consider without investigation that both Charles Darwin and Francis Galton were intellectually the product of their environments, and that all further inquiry was wasted energy. Because there are so many able men whose ancestry is insignificant, the group to which I refer has never mastered the paradox that, while ability is inherited, a majority of able men have not had a noteworthy ancestry. Pairs of exceptional parents produce exceptional sons at a rate more than ten times as great as commonplace parents, but because exceptional parents only form about one-half per cent. of the community exceptional men as a rule have not had a noteworthy ancestry.

It is peculiarly fitting in this place to turn to the question of ancestry, because if there is one point in his work that Francis Galton laid emphasis upon it was that the mental aptitudes are hereditary. His three chief works, *Hereditary Genius*, *English Men of Science* and *Inquiries into Human Faculty* were essentially devoted to the thesis that mental characters are inherited in the same manner and at the same rate as the physical characters. Even in his *Natural Inheritance*, Galton's fourth great book, he writes:

"We may therefore conclude that the same law...which governs the inheritance both of Stature and Eye-colour, applies equally to the Artistic Faculty" (p. 162).

And again in the *Fortnightly Review* for 1887 :

“I shall have fulfilled my object in writing this paper if it leaves a clear impression of the great range and variety of temper among persons of both sexes in the upper and middle classes of English society; of its disregard in Marriage Selection; of the great admixture of its good and bad varieties in the same family; and of its being nevertheless as hereditary as any other quality.”

Or lastly in 1904, writing in *Nature* (August 11) of his investigations into “Natural Ability among the Kinsfolk of Fellows of the Royal Society,” Galton says :

“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 which rapidly diminishes as the distance of kinship from its centre increases.”

To these and many other published statements of Francis Galton could be added many memories of private talks. But perhaps the memorable letter of 1869¹, in which Charles Darwin acknowledges the receipt of Galton’s *Hereditary Genius*, may suffice to demonstrate how early Galton taught the heredity of the mental characters. It runs as follows :

DOWN, BECKENHAM, KENT, S.E.

Dec. 23 (1869?).

MY DEAR GALTON,

I have only read about 50 pages of your Book (to the Judges), but I must exhale myself, else something will go wrong in my inside. I do not think I ever in all my life read anything more interesting and original. And how well and clearly you put every point! George, who has finished the book, and who expresses himself just in the same terms, tells me the earlier chapters are nothing in interest to the latter ones! It will take me some time to get to these latter chapters, as it is read aloud to me by my wife, who is also much interested. You have made a convert of an opponent in one sense, for I have always maintained that, excepting fools, men did not differ much in intellect, only in zeal and hard work; and I still think there is an *eminently* important difference. I congratulate you on producing what I am convinced will prove a memorable work.

I look forward with intense interest to each reading, but it sets me thinking so much that I find it very hard work; but that is wholly the fault of my brain and not of your beautifully clear style.

Yours most sincerely, CH. DARWIN.

The point to which Charles Darwin was converted was the principle that intellectual ability is hereditary. That much of that ability consists in the faculty for hard work is a further principle with

¹ The letter is so characteristic, that I have reproduced it here followed by Galton’s reply on the day of receipt: see Plates I and II.

Dec. 28

Beethoven
1807.
Amst. S. D.

My dear father

I have not read about 50 pages

of your Book (to be precise) but

I must exhort myself,

since something will be

wrong in my side. I

do not think I will

be able to give rest

to anything more interesting &

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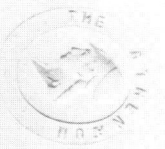
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 I look forward with

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 me thinking so much that
 I find it very
 hard work; but the
 result is really the fault of
 my brain & not of
 your beautiful character
 style -
 Yours most sincerely
 Ch. Darwin

Letter of Charles Darwin to Francis Galton on the publication of the latter's Hereditary Genius, 1869.

You and yours a very
happy Christmas

Believe me very sincerely
Francis Galton.



42 Postland Park Sq
Dec 24 - 1869

My dear Darwin.

It would be
idle to speak of the delight
your letter has given me,
for there is no one in the
world whose approbation
in these matters can have the
same weight as yours. Next
to these are those whose
approbation I prize more
highly, in purely personal

ground, because I always
think of you in the same way
as converts from barbarism.
Think of the teacher who first
relieved them from the
intolerable burden of their
~~old~~ superstition. I used to

be wretched under the weight
of the old fashioned 'argument
from design', of which I felt
though I was unable to prove
to myself, the worthlessness.
Consequently the appearance

of your 'Origin & Species'
formed a real crisis in
my life; your ~~theology~~ book
drove away the constraint
of my old superstition as
if it had been a nightmare
~~was the first to~~ and gave me freedom of
thought.

I ^{now} look forward anxiously
to your final opinion after
you have sent your thoughts
through the book. — wishing

which most of us would also agree with Darwin—not the least Galton himself—with the proviso, that that mental faculty also is largely subject to hereditary control.

And Darwin did not hesitate to give expression to his conversion in *The Descent of Man* published two years later (Ed. 1885, p. 28).

“So in regard to mental qualities, their transmission is manifest in our dogs, horses and other domestic animals. Besides special tastes and habits, general intelligence, courage, bad and good tempers, etc., are certainly transmitted. With man we see similar facts in almost every family; and we now know, through the admirable labours of Mr Galton, that genius which implies a wonderfully complex combination of high faculties, tends to be inherited; and, on the other hand, it is too certain that insanity and deteriorated mental powers likewise run in families.”

The chief conclusion of Galton's work, the most fixed principle of his teaching, was the like inheritance of the mental and physical characters. Many passages in his writings show that he fully appreciated the modifications introduced by environment, but these modifications can be for any character plus or minus in effect, and on the average the hereditary factor comes out as the main controlling feature.

It seems only a few months ago that talking with him over the almost bitter feeling which the work of the Galton Laboratory on environment had called forth, he said: “I wish they (the critics of that work) would study the subject of twins,” and referred to his investigations of 1875. I wonder how many of those critics have studied Galton's papers on twins! Had they done so, would they have supposed that the contrast of Nurture and Nature was a new fad of the Director of the Eugenics Laboratory, and had not been recognised and rendered definite by Francis Galton himself. Let such study the section in *Hereditary Genius* entitled “Nature and Nurture,” and its words:

“When nature and nurture compete for supremacy on equal terms in the sense to be explained, the former proves the stronger. It is needless to insist that neither is self-sufficient; the highest natural endowments may be starved by defective nurture, while no carefulness of nurture can overcome the evil tendencies of an intrinsically bad physique, weak brain, or brutal disposition. Differences of nurture stamp unmistakable marks on the disposition of the soldier, clergyman, or scholar, but are wholly insufficient to efface the deeper marks of individual character” (p. 12).

How did Galton try to solve the relative strengths of “nature and nurture”—this “convenient jingle of words,” as he terms it, which

“separates under two distinct heads the innumerable elements of which personality is composed”? He noted that twins are of two kinds—those born physically and mentally alike, and those born as unlike as ordinary brothers and sisters. He proceeded to determine how far like twins were differentiated by unlike environments, and how far unlike twins were rendered like by their common nurture. He discovered that whatever the environment like twins remained alike and unlike twins remained unlike, even as they were born. Thus he sums up his *History of Twins, as a Criterion of the Relative Powers of Nature and Nurture* :

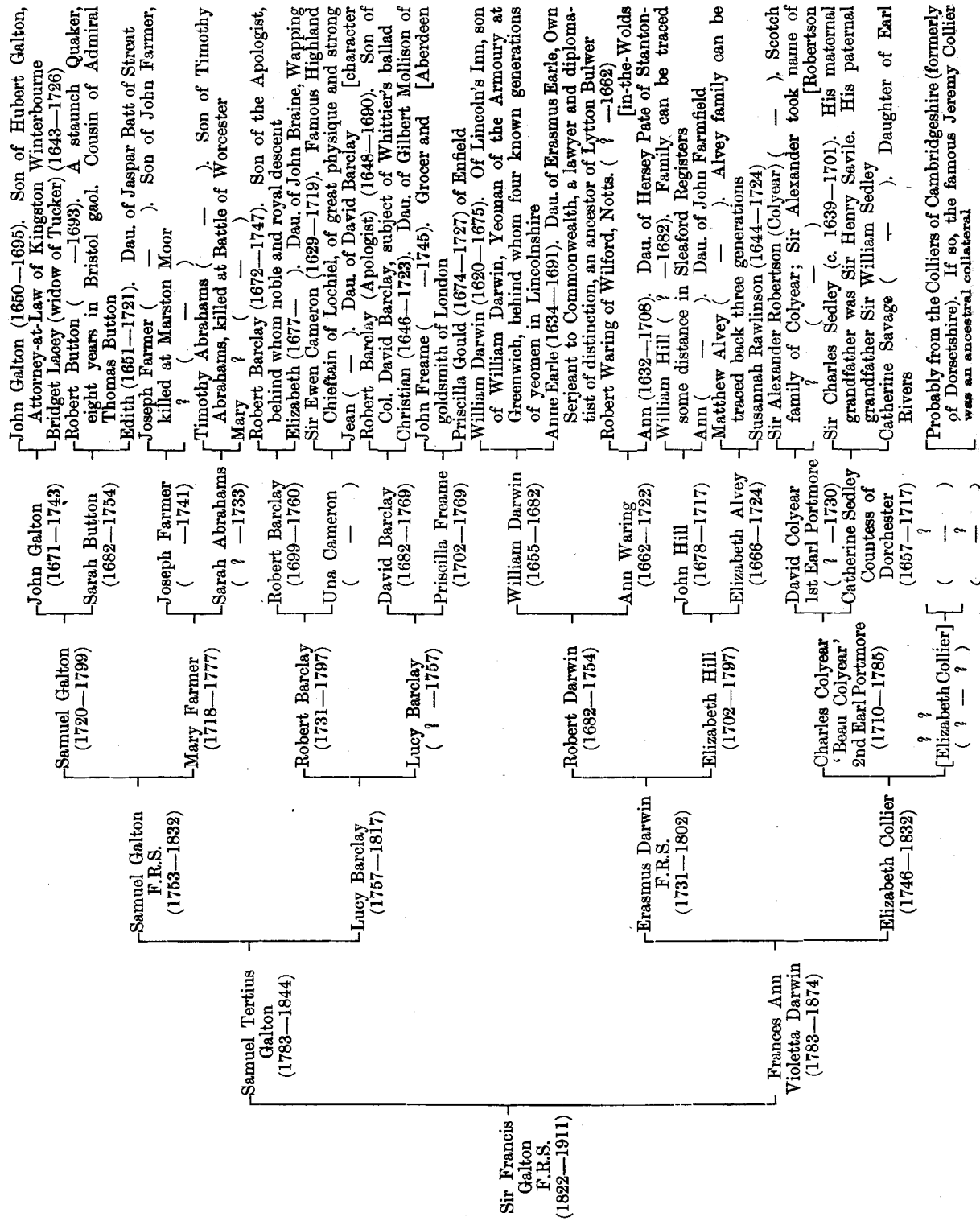
“There is no escape from the conclusion that nature prevails enormously over nurture when the differences of nurture do not exceed what is commonly to be found among persons of the same rank of society in the same country. My only fear is that my evidence seems to prove too much, and may be discredited on that account, as it seems contrary to all expectation that nurture should go for so little. But experience is often fallacious in ascribing great effects to trifling circumstances. Many a person has amused himself by throwing bits of stick into a tiny brook and watching their progress; how they are arrested, first by one chance obstacle, then by another; and again, how their onward course is facilitated by a combination of circumstances. He might ascribe much importance to each of these events, and think how largely the destiny of the stick has been governed by a series of trifling accidents. Nevertheless all the sticks succeed in passing down the current, and they travel, in the long run, at nearly the same rate. So it is with life, in respect to the several accidents which seem to have had a great effect upon our careers. The one element, which varies in different individuals, but is constant for each of them is the natural tendency; it corresponds to the current in the stream, and inevitably asserts itself.” (*Journal of the Anthropological Institute*, 1875, p. 391, etc.)

Such work as the Galton Laboratory has done was to give quantitative definiteness to this conclusion of its founder. And, in view of it, would it not be idle in this biography to pass over the nature—the ancestral factor—and spend our time chiefly on the nurture of Francis Galton? To those of us who believe in alternative inheritance, to those again who favour its more fashionable Mendelian phases, there is nothing marvellous in transcendent intellectual power being associated with *one* member of a Darwin or with *one* member of a Galton fraternity. To those who put their faith in nurture as the controller of mental characters, it must be a standing miracle that brothers reared under identical environment should fail to show the same ability, or showing the same ability should be so diverse in their physical attributes or in other mental characters!

So much then can be said in favour of the study of Francis Galton's ancestry. While he himself has told us in broad outline what he owes to the strains which were mingled in his blood, there is much that he has not referred to, that possibly he could not refer to, either from modesty or ignorance. I have heard him speak with keen appreciation of his Quaker forbears; but I doubt if he knew, or if even we now know all they suffered for their faith. Besse's record, in his *Collection of the Sufferings of the People called Quakers*, is little more than a list of fines, imprisonments, and deaths, yet it occupies two large folio volumes, and the present writer, from a study of the Yorkshire records alone, knows how incompletely it represents all that occurred. Of that other wider side of his ancestry—which indeed helped the Apologist Robert Barclay to lighten the grave oppression directed against the early Society of Friends by actively soliciting his royal kinsmen in their favour—of this side of his ancestry Galton rarely if ever spoke. Yet it is one that we cannot pass over.

As one who has dealt with many family pedigrees, chiefly of the professional classes, the writer's experience has been of the following kind. In ascending backwards we pass, perhaps through the squirearchy, eventually into the yeoman class. Here there is no hope of going further than the church registers (say to 1600) will carry us, or perhaps the wills a hundred years further. We leave the family on the soil, and we have no trace of further distinction or knowledge of its ever being anything but autochthonous. If a member reached, before that date, celebrity by marked ability, he was either an ecclesiastic who left no offspring, or he and his family were raised to the noble class. Once reach the yeoman class, and there is little hope of going beyond the data in the deeds of the yeoman's chest. A second method of terminating our ascent is to reach a bar-sinister, beyond which in more recent times there is only perhaps feeble family tradition, or in early times little screened disgrace, or even much pride. Lastly we may find ourselves passing into a noble or royal family, which for generations has maintained its position by its physique and mentality. And here, perhaps, we may recognise a distinct difference between what this means now and what it meant before 1700. From our earliest knowledge of European history, till something like the 17th century, there was a continuous and most stringent selection of all noble and royal stocks. To retain your head on your shoulders and yet rise to

DIRECT ANCESTORS OF SIR FRANCIS GALTON, AS FAR AS YET TRACED.



distinction in your country meant immense resource, activity and mental ability. Men like Alfred the Great, Friedrich Barbarossa, or William the Conqueror, were kings because they were essentially men preeminent in ability in their days; and to show in the male line a continuous descent of ten generations, as the de Bruces did, signified that the family had craft to gain and strength to hold the acquired. The game at politics meant death to the checkmated, often destruction of their stock and forfeiture of their land. Thus it came about that royal and noble blood, from early mediaeval times almost to the close of the Stuart period, really signified stocks of physical and mental strength; and the earlier we go back the more certain is this truth. To anyone whose ancestry carries him to such noble or royal lines, there will be little difficulty in linking on to most of the great names of early European history.

To follow step by step backwards the pedigree of one man like Francis Galton till we can go no further, but find all our lines fail us, is perhaps the most instructive lesson in history that is possible. The biographer has learnt more history, social and political, in the present inquiry than he had ever done before. One sees not only our own times linked up with great names in the past, but one feels that yeoman, squire, noble and king form a more homogeneous whole than we have hitherto appreciated with our narrow class distinctions; and we realise that the stocks which led to famous men of old may exhibit them to-day in methods more in keeping with our social ends.

It seems to me that the pedigree showing the noteworthy ancestry of the Barclays is in itself a full reply to those who think it suffices to say that Francis Galton was a grandson of Erasmus Darwin! Francis Galton owed much to his Darwin descent, but he owed not less to other strains, and notably to the firmness, conviction, toleration, and business aptitude of those Quaker strains of Galton, Button, Farmer and Barclay which formed nearly half his heritage.

I trust that Pedigree B¹ may show the reader reason enough for taking a wider view than Galton himself has given us of his past family history; for indicating as he himself has indicated that it is neither to be wholly neglected, nor summed up in any one line of descent. The nurture of comfortable homes, good schools and our leading universities was provided for both Charles Darwin and Francis Galton, but it was

¹ See end of this volume.

provided also in like measure for literally hundreds of their contemporaries. If nurture could produce such mental characters as we find in both, then we should count such men by the tens instead of by units. Nurture indeed! Let us listen to what Galton himself says of his school—the King Edward's School at Birmingham :

“The literary provender provided at Dr Jeune's school disagreed wholly with my mental digestion. The time spent there was a period of stagnation to myself, which for many years I deeply deplored, for I was very willing and eager to learn, and could have learnt much, if a suitable teacher had been at hand to direct and encourage me.” (*Memories*, p. 21.)

Or, again, try Darwin! Writing of Shrewsbury, his school, he says : “The school as a means of education to me was simply a blank,” and again of his course at Edinburgh :

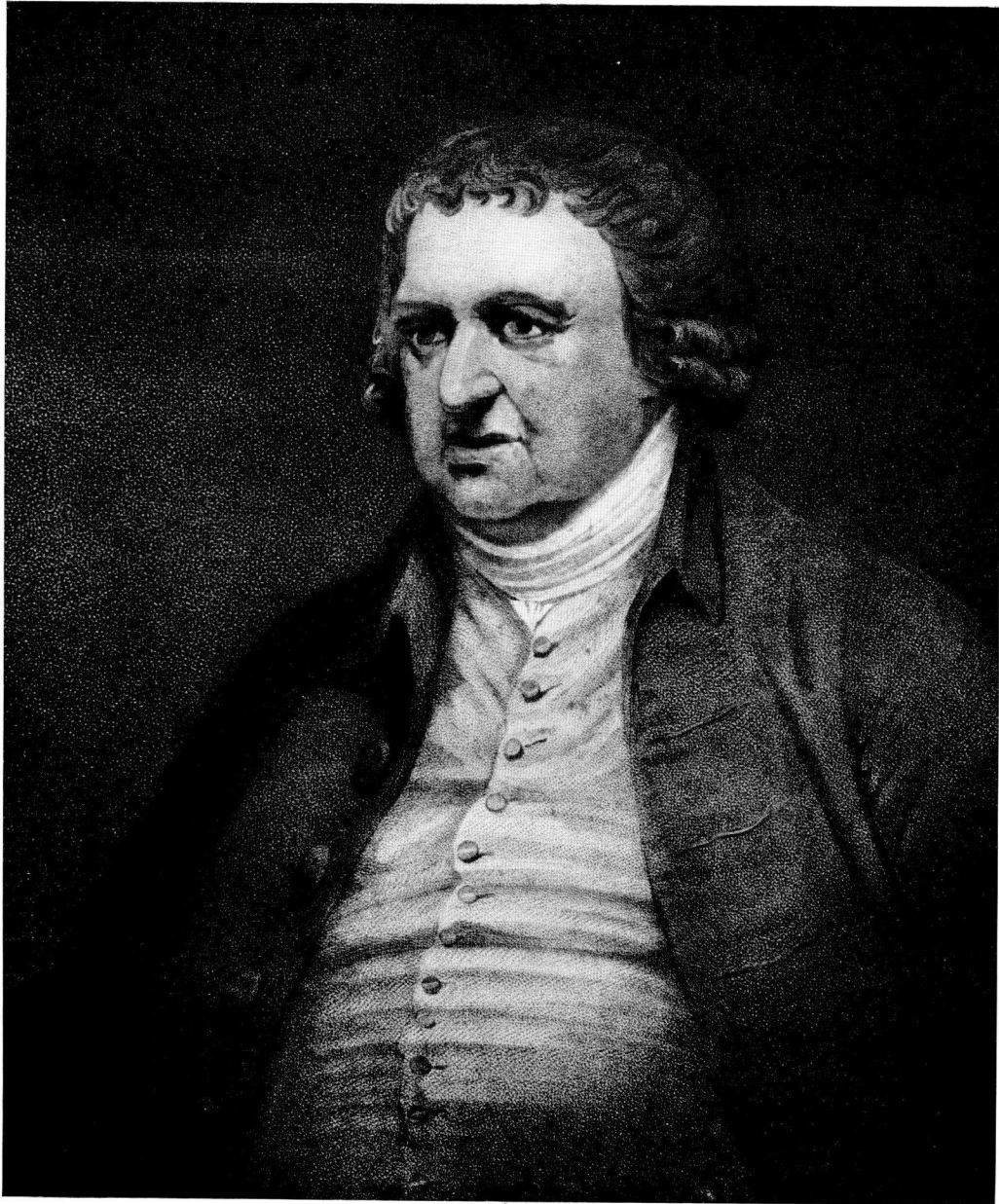
“The instruction at Edinburgh was altogether by lectures, and these were intolerably dull, with the exception of those on chemistry by Hope ; but to my mind there are no advantages and many disadvantages in lectures compared with reading.” (*Life*, 1, p. 36.)

At Cambridge both cousins took Poll degrees. Darwin says that his three years at Cambridge were “wasted as far as the academical studies were concerned, as completely as at Edinburgh and at school.” Galton wondered at the narrowness of Cambridge, “for not a soul seemed to have the slightest knowledge of, or interest in, what I had acquired in my medical education, and what we have since learnt to call Biology” (*Memories*, p. 59).

Undoubtedly their Cambridge time gave Darwin and Galton much—friends and the leisure to develop on their own lines. But in neither case was it nurture moulding the men, it was nature making the best use of an uncongenial environment.

It may be said that the nurture was not that of school or college, but the nurture of the home. Both men were the exceptional members of generally able stocks. That in many respects their home-conditions were sympathetic goes without saying, but these home conditions were similar to those of others of their own stock and of many contemporaries. It may be said that their common grandfather was a man of distinction, and that although his writings were open to the world, Charles Darwin and Francis Galton, although born after Erasmus's death, came by family tradition more closely in touch with his teaching.

Yet here is what Charles Darwin wrote of his grandfather's chief work ; he is speaking about his Edinburgh acquaintance with R. E.



ERASMUS DARWIN (1731—1802).
From a print after a picture by Rawlinson of Derby.

Grant, afterwards Professor of Comparative Anatomy in University College, London, to whom that College owes its fine Grant Library:

"I knew him well; he was dry and formal in manner, with much enthusiasm beneath this outward crust. He one day, when we were walking together, burst forth in high admiration of Lamarck and his views on evolution. I listened in silent astonishment and as far as I can judge without any effect on my mind. I had previously read the *Zoonomia* of my grandfather, in which similar views are maintained, but without producing any effect on me. Nevertheless it is probable that the hearing rather early in life such views maintained and praised may have favoured my upholding them under a different form in my *Origin of Species*. At this time I had admired greatly the *Zoonomia*, but on reading it a second time after an interval of ten or fifteen years, I was much disappointed; the proportion of speculation being so large to the facts given" (p. 38).

In a letter to Alphonse de Candolle written shortly after Charles Darwin's death in June, 1882, Francis Galton says:

"Thank you very *much* for your interesting brochure on Charles Darwin, analysing the causes that contributed to his success. It has been a great satisfaction in all our grief at his loss, to witness the wide recognition of the value of his work. He certainly as you say appeared at a moment when the public mind was ripe to receive his views. I can truly say for my part that I was groaning under the intellectual burden of the old teleology, that my intellect rebelled against it, but that I saw no way out of it till Darwin's *Origin of Species* emancipated me. Let me, while fully agreeing with the views expressed in the pamphlet in all important particulars supply a few minor criticisms which it might be well to mention."

After a reference to economic matters Galton cites the words of de Candolle that the descendants of the "poete physiologue" had certainly read at the right moment the works of their grandfather, and continues:

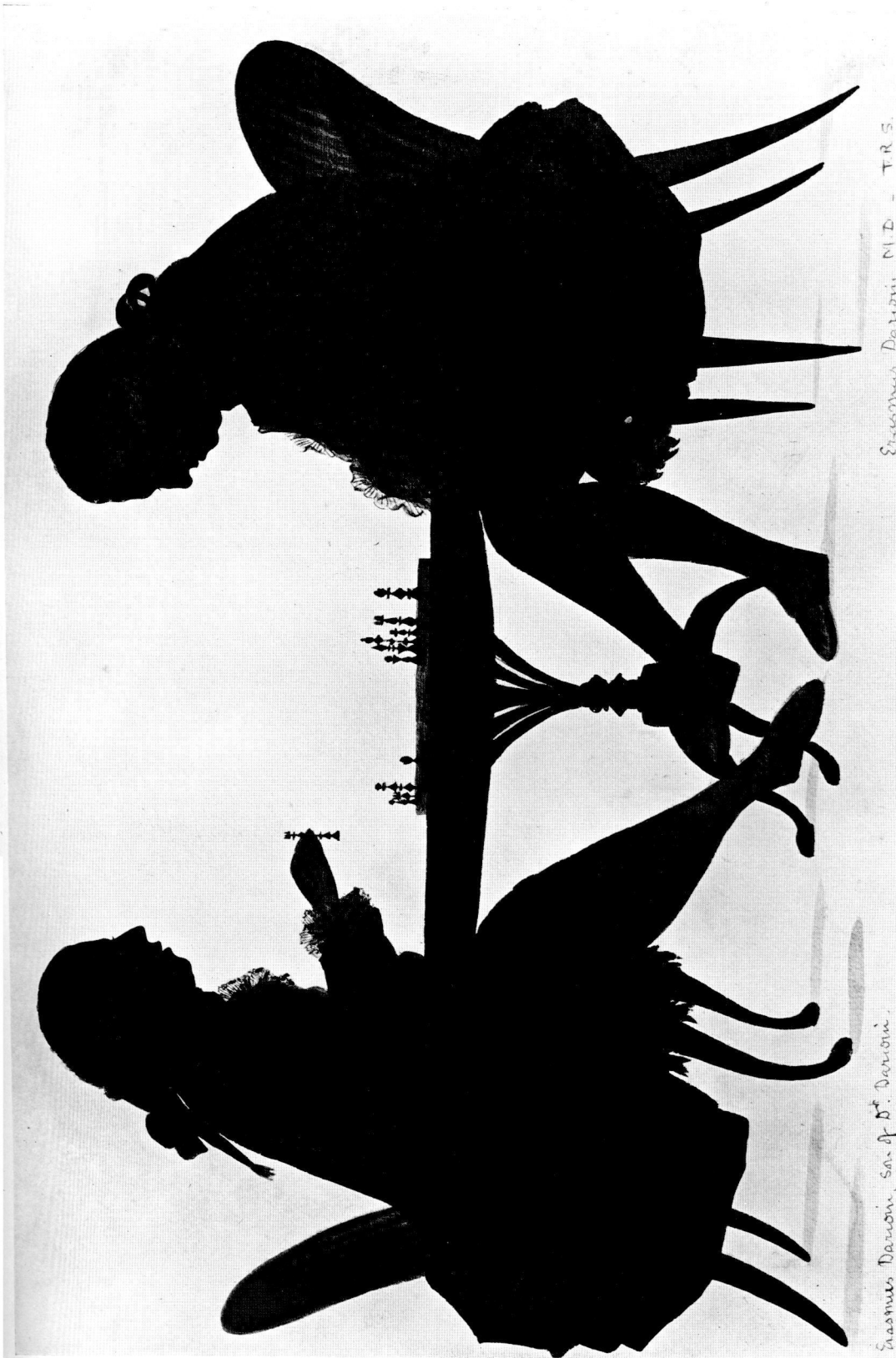
"I am almost certain of the contrary in every case except Charles Darwin (and I doubt whether he had)—[as we have seen, he certainly had read the *Zoonomia*]. To myself the florid and now ridiculed poetry was and is intolerable, and the speculative physiology repellent. I had often taken up the books and could never get on with them. Canning's parody *The Loves of the Triangles* quite killed poor Dr Darwin's reputation. It just hit the mood of the moment, and though my mother never wearied of talking of him, his life was to me like a fable only half believed in. That much the same was the case with some of Charles Darwin's sons, I can I think affirm."

Without being, perhaps, as hard on "poor Dr Darwin" as his grandson, I think we must admit that it was the hereditary taste or bent of the Darwin stock that Erasmus transmitted to his grandchildren and not an environment or even a sympathetic tradition. In studying the works of Erasmus Darwin, it is indeed difficult not to be

repelled by the florid language or the want of reasoned inference drawn from marshalled facts. Part of this is due to his date, but not all, for his time carries us to the Wollastons, Young, Kerwan, Priestley and Smeaton, some of whom were close intimates of Darwin himself, to say nothing of the great continental physiologists, naturalists and mathematicians. Darwin's defects were partly due to his environment, the incessant occupation of a most popular physician, which hindered the possibility of a life wholly devoted to science, the smaller interests and the want of friction with the best minds which must often occur in narrow provincial circles—though the neighbouring Birmingham was in those days a centre of considerable mental activity. Yet beyond all this there was something of the prophet about Erasmus Darwin. He had thrown off the old teleological dogmas and was seeking a new theory of life, and he had inspirations even if his poetical representation of them wearied his grandsons and in no lesser degree wearies a still more modern reader. To start examining the characters of living forms not with a view of seeing in them evidence of design, but of testing their utility to the owner and how he or his stock might have acquired them, was a real step forward. Had Erasmus Darwin been by calling a man of science and not of medicine, doubtless many of his inspirations would have perished under his own analysis. Others would have stood his trained criticism, and been established by marshalled facts—as true scientific knowledge. As it is we regard him as a most interesting personality, almost as a man of genius; but rather as evidence of the general ability of the Darwin stock, than as a powerful environmental or traditional factor influencing the development of either Charles Darwin or Francis Galton¹.

With our present views on heredity, we look upon Charles Darwin and Francis Galton as drawing their ability from the same reservoir as Erasmus Darwin did, but we realise that it only flowed from him to them in the sense that he was the conduit, not the source of the ability.

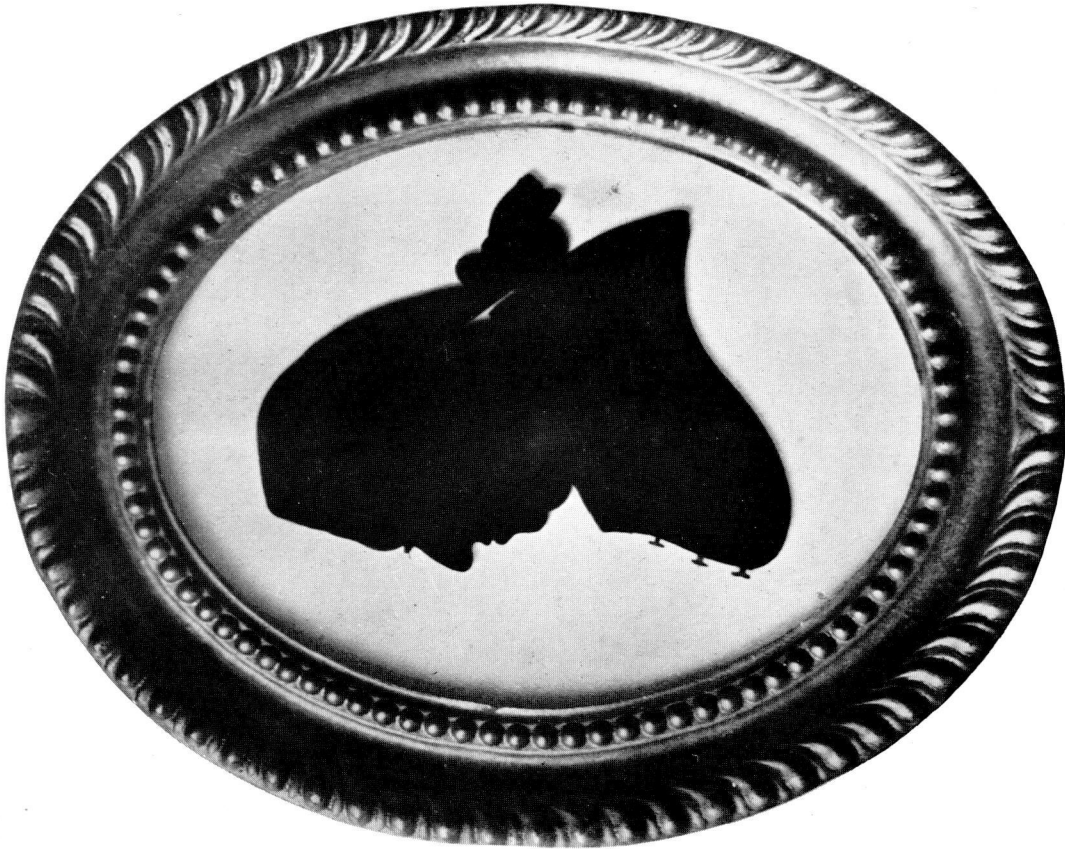
¹ This view was fully accepted by Francis Galton himself. Writing of men of science in his *Hereditary Genius* (1869) he says: "The number of individuals in the Darwin family who have followed some branch of natural history is very remarkable—the more so because it so happens that the tastes appear (I speak from private sources of knowledge) to have been more personal than traditional. There is a strong element of individuality in the different members of the race which is adverse to traditional influence."



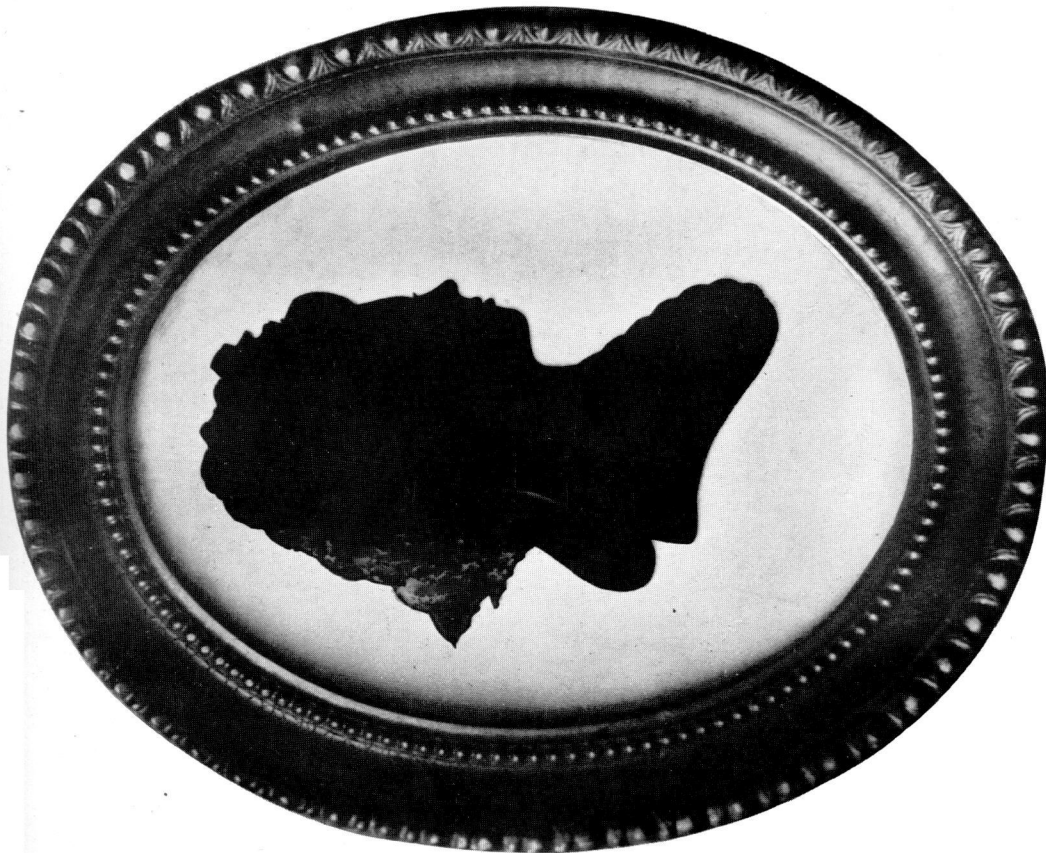
Erasmus Darwin, son of Dr. Darwin.

Erasmus Darwin, M.D. - F.R.S.

ERASMUS DARWIN (left) and his Father Dr ERASMUS DARWIN (right) at Chess.
From a silhouette at Claverdon in the possession of Mr Wheeler Galton.



DR ERASMUS DARWIN.
Mrs T. J. A. Studdy.



ELIZABETH DARWIN (*née* Collier).
Derby, 1800.

It is worth noting here that we cannot, when judging of the ability of the Darwin stirp, confine our attention to Erasmus and Charles. Erasmus Darwin's brother—the elder Robert Waring Darwin—published a *Principia botanica or Introduction to the Sexual Botany of Linnaeus*. The present writer is not able to judge its merits, but it ran through several editions, and illustrates at least the taste and bent of the stock. We note how the scientific work of the Darwins begins *de novo* in this generation with the two brothers Robert Waring and Erasmus¹. The sons of Erasmus by his first wife were Charles, Erasmus and Robert Waring, the father of the greater Charles the younger. It is difficult in this case to separate out the personality of Erasmus the elder from that of his sons. Yet I think there is evidence that there was independence. Charles died from a dissection wound at the early age of 20, and a prize essay of his on pus and mucus and his proposed doctor's thesis were afterwards edited by the elder Erasmus. In the prize essay we find a number of experiments, in the thesis a round of clinical observations discussed in moderate and straightforward language. Only occasionally, as in the peroration of the thesis, do we feel sure that we read the words of the father, Erasmus himself:

“I beg, illustrious professors, and ingenious fellow-students, that you will recollect how difficult a task I have attempted, to evince the retrograde motions of the lymphatic vessels, when the vessels themselves, for so many ages, escaped the eyes and glasses of philosophers; and if you are not quite convinced of the truth of this theory, hold, I entreat you, your minds in suspense, 'till ANATOMY draws her sword, with happier omens, cuts asunder the tenets which entangle PHYSIOLOGY; and, like an augur, inspecting the immolated victim, announces to mankind the wisdom of HEAVEN².”

In the same manner it is not possible to judge fairly of the thesis of Robert Waring Darwin which was published at Leyden in 1785, and afterwards in the *Philosophical Transactions*, 1786. The author was at the date of publication only 19, and Charles Darwin asserts that it was written by Erasmus. It largely reappears in the *Zoonomia*, but contains more appeal than the elder Darwin usually

¹ I hardly think we can class Robert Darwin their father in this category; see however *Life and Letters of Charles Darwin*, 1, p. 3.

² Even the printing of Heaven in smaller capitals than the Sciences is characteristic of Erasmus Darwin's muse, although when reprinting the essay in his *Zoonomia*, Vol. 1, p. 512, he seems to have become conscious of the difficulty and transposed the sizes!

makes to experiment¹. The second son of Erasmus the elder, Erasmus the younger, seems to have been in character more like his nephew Erasmus Alvey Darwin, the brother of Charles and friend of Thomas Carlyle and his wife. He is reported to have been interested in statistics, and although we do not lay much stress on this point, it deserves notice with regard to later developments of ability in the Darwin family. Erasmus Darwin the elder seems to have had distinct mechanical ability, and physical tastes; he was ingenious in mechanisms—as perhaps the sketch of his ferry at Derby, taken from a brief autobiography of his son, Sir Francis Sacheverel Darwin, will indicate (see Plate V). He was also in constant touch with a number of men working with distinction at mechanical problems. He invented a wind-mill to grind colours² for his friend Wedgwood, which after approval by Watt was not only used, but continued to be used till a steam-engine by Boulton and Watt replaced it. To Darwin again Watt first imparted under pledge of secrecy his plan for improving the steam-engine³. Indirectly also we find Darwin intelligently interested in astronomical and physical matters, such as the returns of comets predicted by Halley, the nearest approach of comets to the earth as discussed by Bode, or the experiments on mixing colours and on the nature of primary colours by his friend Samuel Galton—his grandson's paternal grandfather. On the whole we see in Erasmus Darwin most of the scientific tastes which have been developed with greater thoroughness by his children, grandchildren and great-grandchildren.

When we look at these four generations of scientific workers, the variable nature of their work—medical, biological, mathematical, mechanical—the wonder is not that ability has been maintained, but

¹ Erasmus himself, in 1788 (*Botanic Garden*, Part II, p. 262), certainly approves the attribution of the memoir to Dr Robert Darwin. The paper dealing with “ocular spectra” is an interesting one, the earliest as far as I know which drew attention to the “contrast colour” seen by an eye fatigued by looking at a given colour.

² Meteyard, *Life of Josiah Wedgwood*, Vol. II, pp. 29 and 447.

³ Owing to the kindness of Mr Darwin Wilmott I have been able very fully to examine the commonplace book of Erasmus Darwin; it gives the reader a far more favourable opinion of Erasmus than his poems—designs for various mechanisms alternate with accounts of medical cases, and with suggestions for experimental treatment. It is a most interesting and valuable book from both the historical and social aspects. His originality was shown in his attempt to inoculate against measles; this made his son Robert very ill, and his daughter Elizabeth is reported by some to have died as a result.

Peppise accrop the Derwent from Dr D's garden in the Fall that
Derby over to the Orchard Garden - No. 1 D, Dewest Bilstrove V.S.D.
in the Boat - time 1789 -



Plate V

From the MS. Boyhood of Sir Francis S. Darwin. Mechanical Ferry designed by Dr Erasmus Darwin for crossing from his
house in Fell Street, Derby, to his orchard. Francis S. Darwin as a child in the boat. 1789.

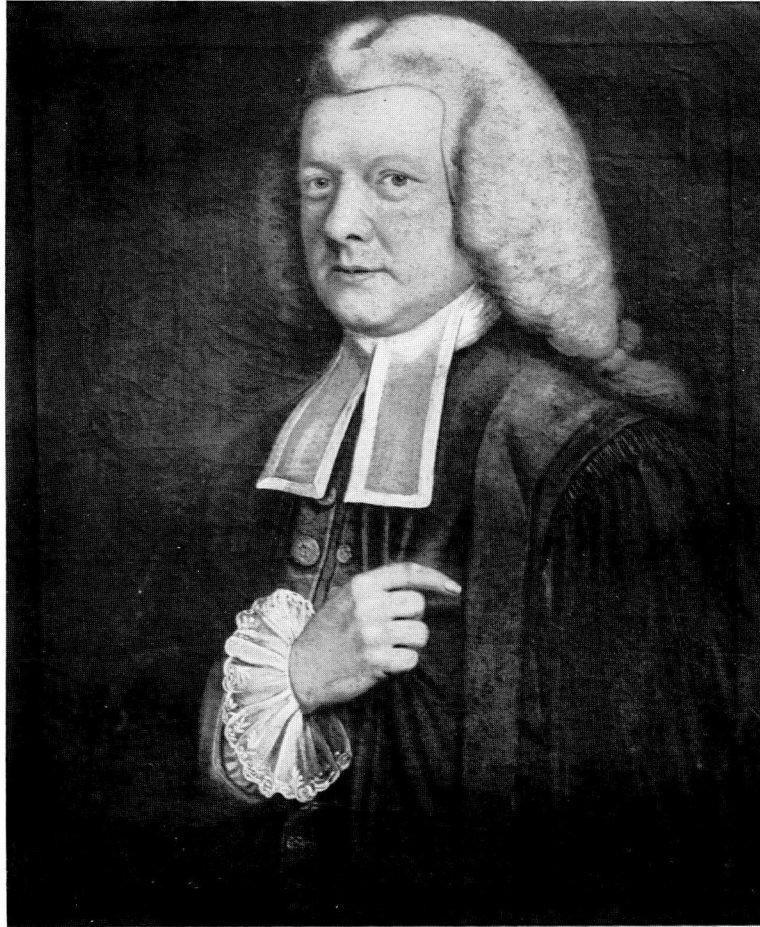


ROBERT DARWIN of Elston (1682—1754).
Great-grandfather of Charles Darwin and Francis Galton. From the portrait
at Creskeld painted by Richardson about 1717.



WILLIAM ALVEY DARWIN (1726—1783).

Brother of Erasmus Darwin. From a photograph in the possession of
Mr William E. Darwin of the picture at Creskeld.



ROBERT WARING DARWIN (1724—1816).

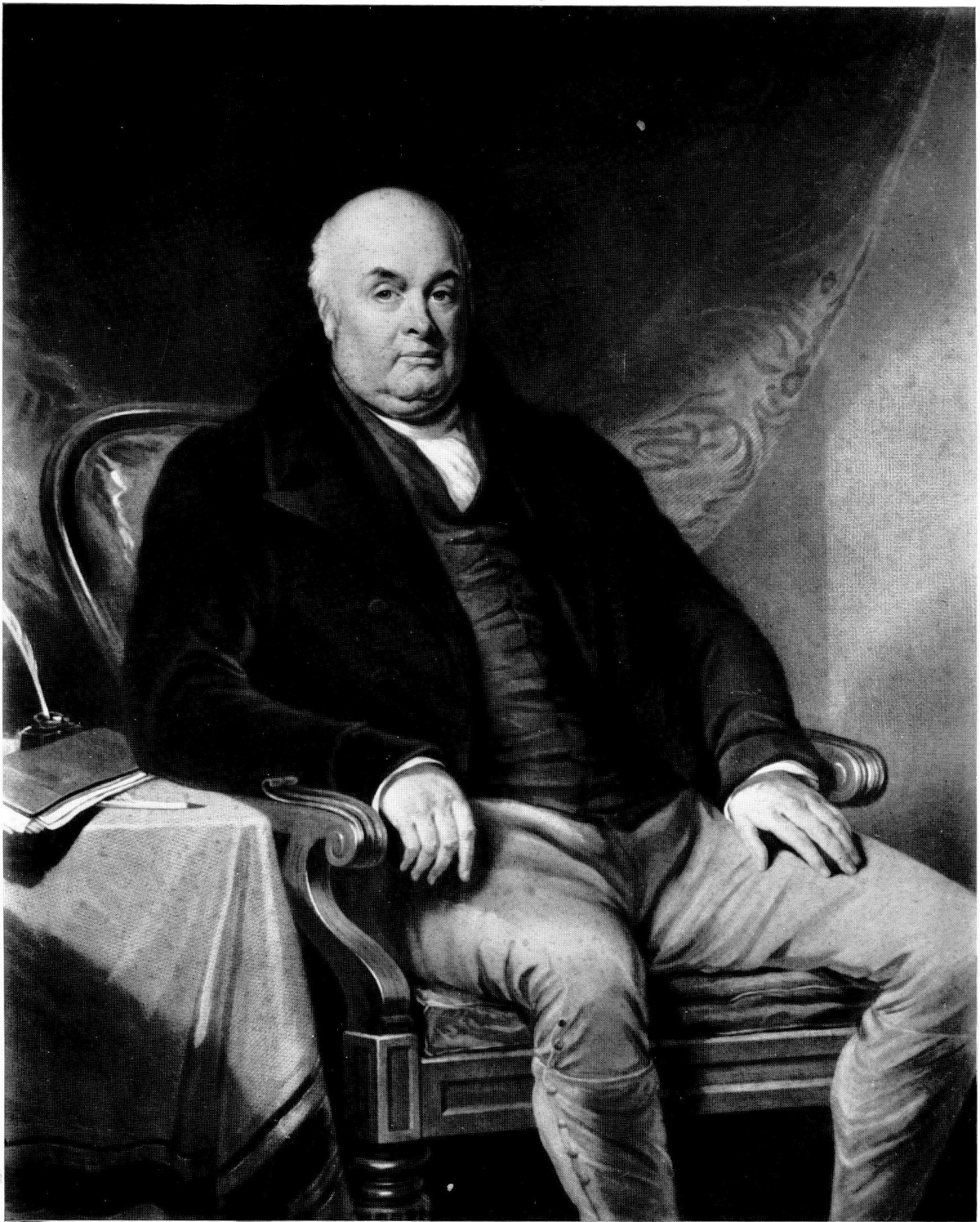
Brother of Dr Erasmus Darwin.

Author of the *Principia Botanica, or Introduction to the Sexual Botany of Linnæus*. Aged 51
From the picture at Creskeld painted by John Borridge, 1775.



ELIZABETH HILL (1702—1797).

Wife of Robert Darwin of Elston, mother of Dr Erasmus Darwin. From a photograph of the portrait at Creskeld in the possession of Francis Darwin, Esq.



ROBERT WARING DARWIN, F.R.S. (1766—1848).

Father of Charles Darwin. From a mezzotint of the painting in the possession of Mr William Erasmus Darwin.
(The mezzotint was engraved before the painting was cut down.)



SUSANNAH WEDGWOOD (1765—1817).

Mrs Robert Waring Darwin, mother of Charles Darwin. From a miniature in the possession of Mr William Erasmus Darwin.