THE BODY IN QUESTION

Some Perceptions, Problems and Perspectives of the Body in relation to Character c. 1750-1850

by

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VOLUME TWO

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PART THREE: ASPECTS OF CHARACTER AND THE BODY IN AND OUT OF SCIENTIFIC CULTURE, c. 1790-1850

The following three chapters treat three independent but closely related systems of explanation, each of which claims to link body and character. I shall try to explore the nature, status and development of these; of physiognomy first, then organology (also known as craniology), and finally phrenology. The first was articulated in its modern form by Johann Caspar Lavater in the 1780s but sunk firm roots in British soil from the turn of the next century; the second was the creation of Franz Joseph Gall and though pioneered some two decades after physiognomy on the continent it travelled across the channel roughly contemporaneously with it. Phrenology can be, and frequently was, seen as a development of physiognomy and organology; one of its leading propagandizers in Britain was Johann Caspar Spurzheim, another George Combe.

My lengthy treatment of the work of Lavater pulls together many of the themes elaborated in the preceding pages, so little introduction is required. In a brief preludial discussion of the history of physiognomy before Lavater, my intention has not been to 'contextualize' Lavater nor to offer a continuous narrative. Such, as I explained in the general introduction, is not my purpose. Rather, this historical portrait is designed to show the kinds of issues

raised in physiognomical discourse once the mind of man is not conceived as complex and contradictory and once the body is depicted in terms of the qualities of the 'letter of recommendation'. In Part One, it will be recalled that I offered a detailed explanation of some of the reasons why physiognomy failed to be accepted as a true means to assess or portray character. In a simple way, it might be said that the barriers which prevented the development of physiognomy in the mid-eighteenth century needed to be removed before that discourse could become established. For example, Hogarth, Fielding and others- those that are closest to being physiognomists- bemoaned the lack of an 'art of seeing'. The thesis I shall be developing in chapter eight is that Lavater provides just this 'art of seeing'. Or rather, he provides a 'science of physiognomical perception'. That he does so, and more crucially that his discourse is read in England as doing so, is testimony to the impact of the scientific popular culture in the 1820s, 1830s and 1840s. The developments we have examined in Part Two allow the rise and spread of those we shall deal with in Part Three.

If the last chapters have required a leap in imagination the following demand one even greater. I have found it difficult to recapture and then convey the full character and implications of Lavater's work, for example. To some degree, of course, we are all physiognomists. Our perceptual apparatus is somehow hypersensitized in the direction of physiognomical vision, as Ernst Gombrich has suggested.[1]

This, as psychologists have shown, applies in the case of other creatures as well- they seem to read physiognomical signs in each other, and we do in them. Without warrant from behavioural scientists and without any knowledge of the writings of Lavater we can see 'courage' in the face of a lion, 'sadness' in the bloodhound and 'superciliousness' in the camel.[2] Moreover, we carry this 'physiognomical sensation' (a term I explain later) into other fields as well. We frequently experience visual qualities as the equivalent of moral values; our speech is littered with so-called synaesthetic metaphors which depend on the connection of elements from different sensory spheres- velvet tones, loud colours, silvery voice. These have been embodied in Western literature and culture almost from its origins, as Stanford has shown;[3] they may even be a primitive survival from the times when man's sense perceptions were far keener and operated more efficiently.[4]

The problem is to attempt to systematize the kinds of associations we make naturally and unconsciously. In Lavaterian terms, the problem is to turn physiognomical sensations into physiognomical perceptions. Lavater claims to see bodies *differently*. He certainly describes them differently in word and image. It is my contention that unless we are simply to reject his work as pseudo-science we need to try to understand the weight that term 'perception' has in his discourse. In many ways, as we shall see, seeing, gazing, perceiving are vehicles for gaining know-

ledge about what is now thought to be hidden from the eye. Lavater may have been resurrecting primitive modes of cognition, or regenerating an 'art of seeing'; it is better, however, to understand his discourse as fully in tune with the scientific culture we have described earlier as popular Baconianism. Some of the connections are clear, others are so deep that I have attempted to convey them just as Lavater would have through visual images and commentaries upon those visual images. My discoveries are, I believe, important and I hope that I may have shown one use to be made of current theories in literary and artistic criticism (I lean heavily on the work of Roland Barthes in my Lavaterian chapter).

Chapters nine and ten extend some of the ideas explored in chapter eight; here, though, I mix exposition and interpretation more conventionally. Moreover, the material is more familiar (though I have used archival sources extensively), so less introduction is required. In my treatment of the work of Gall, I begin by looking at the evolution of his work from the early lectures in Vienna in 1785 (lectures which resulted in his persecution by religious authority, in part as I reveal in my conclusion because of their sexual content) until his lecture tour through Germany and neighbouring states. Here he was joined from 1800 by Spurzheim who helped Gall with his public anatomical dissections of the brain. Gall's most important claims were that the brain was the organ of mind, that moral and intellectual faculties were innate,

and that contrary to uniformitarian notions, the brain was made up of separate and distinguishable organs. Each of these organs housed a faculty and the sum of these resulted in man's characteristic nature.

Popular as he was in Germany, Gall's success was greater in France for there in the early 1800s the well-organized, hierarchical scientific culture welcomed work which, as I show, followed researches already carried out in the *Institut de France*. Reputed as it was, French science never claimed to be independent from the state, and this connection was demonstrated when Napoleon pressurized Cuvier to re-assess Gall's work. This Cuvier did with results which, though predictable, had repercussions far beyond the scientific community's narrowly delimited sphere. Gall came through his ordeal at the hands of Cuvier, Flourens, Magendie and others with a curious reputation. Accepted as a skilled anatomist, the anatomical bases of his organological system were declared to be indefensible. Acclaimed as a serious researcher of brain function, his system was in some quarters rejected as little more than superstitious nonsense and quackery.

I attempt to show that Gall was neither a formidable anatomist nor a mountebank. Or rather, that he was both. Better still, he was each at different periods of his career in the view of distinct audiences, sáy, within different explanatory structures. I take the example of the debate about the existence of separate organs in the

brain as revealed by anatomical experimentation in chapters nine and ten as something of a case-study of the manner in which methodological debates about the nature of evidence, the character of an explanation, and the domain of investigation inform and control the character of a discourse and discursive practice. It may well be an exaggeration (and one I do not make in the following pages) to say that Gall did not understand his critics and they did not understand him. His discourse and theirs' like that of Spurzheim and Combe and their opponents, were incommensurable. An exaggeration, since if this were so I would have experienced more trouble than I did in recounting this period of scientific/pseudo-scientific history; but a useful exaggeration perhaps.

This conflict and the lessons I seek to draw from it require a detailed inspection of the material. This in turn permits me, as will be seen, to offer some precise accounts of the breaks and divisions between Gall and succeeding phrenologists, as well as within the British phrenological community. The debates within British phrenology have not, I believe, been given the attention they deserve; for my purposes it is essential to do so, for this throws the nature and extent of scientific culture during the period into sharp relief.

The apparent rejection by Gall of the validity of anatomical experimentation on the brain as a means of acquiring knowledge of its structure and function marked a decisive

conjuncture in the shift from organology to phrenology. With this rejection, a discourse linking the appearance of body and mind was opened to a far wider range of confirming evidence and to much broader application. As an illustration of this point, the enquiry that follows will address the question of the place of perception in organology and phrenology and the question of how perception forms a bridge linking phrenology to popular Baconianism.

NOTES: PART THREE, INTRODUCTION

1. E.H. Gombrich, Meditations on a Hobby Horse, 1963, 6.

2. See ibid., 44-55.

3. W. Bedell Stanford, Greek Metaphor. Studies in Theory and Practice, Oxford, 1936, 47-62.

4. Some interesting work has been carried out on the equivalence between emotional states and colours which suggests inborn dispositions in us to equate certain sensations with certain feeling tones (see Charles E. Osgood, George J. Suci, and Percy H. Tannebaum, The Measurement of Meaning, Urbana, 1936).

CHAPTER EIGHT: THE SCIENCE OF PHYSIOGNOMICAL PERCEPTION

In the earliest classical literature physiognomy seems to serve as an eminently practical philosophy, and is frequently used to form fast and reliable judgements in day-to-day affairs. The Homeric poems carefully monitor expression, but they provide no more than rudimentary correlations between both momentary and permanent appearance and character. The 'letter of recommendation' we referred to in Part One underscores many of Homer's apparently physiognomical descriptions; in the Iliad, for example, Thersites's repulsiveness of expression- his game foot, bandy legs and rounded shoulders- denote a vicious nature just as his murderer Achilles's handsomeness represents his purity and inner strength.[1] Hippocrates, who gathered together most of what seemed sound in ancient medicine, extended this basic principle in his Airs, Waters, Places by studying the effects of environment on disposition and bodily features.[2] According to Aulus Gellius, Pythagoras practiced a physiognomical diagnosis of the characters of candidates for pupilage before admitting them.[3] We have no exact knowledge of the nature of this diagnosis (it may well have been accumulated during his travels since the Indians and Egyptians were also practitioners), but it would seem to have been one of a number in circulation at the time since Pythagoras is said to have

rejected Cylo on account of his support for rival physiognomical theories.[4]

Plato informs us that Socrates foresaw the promotion of Alcibiades from the pleasing configuration of his features; but although he generally approves of such deductions in the Timaeus and the Laws, Plato also warned that appearances are often deceptive.[5] In the classical period, these writers and many others, including Aristotle, Polemon, Petrarch, Petronius, Juvenal, Quintilian, Pliny, Suetonius and Seneca all referred to or dealt at length with physiognomy.[6] For many the art served practically as a means of divination,[7] and Galen, who includes a brief discussion of physiognomy in his work, deprecates the subject because of its unconsidered use as a means of seeing into the future.[8] Elsewhere, however, Galen in common with other physicians finds physiognomy to be a useful diagnostic aid.[9] Whilst interest in the subject may have flagged after the collapse of the Roman empire, physiognomy grew in stature and importance as the Middle Ages discovered the Greco-Roman philosophers directly or via Islamic editors.[10] In its revived form, as part of the dictum 'know thyself-know others',[11] physiognomy was especially prominent during the sixteenth century.[12] Here it was often extended to apply to the whole of the natural world, and generally assimilated with the doctrine of sympathies and signatures, and with mystical, theosophic and Rosicrucian ideologies.[13]

We have referred already to the importance of the works of Giovanni Battista Porta, which sought to set out a full set of correspondences between the heavens and the lower world and which went little further in human characterology than positing correlations between fixed animals types and humans. Such attempts were widespread during the sixteenth and seventeenth centuries, as Lynn Thorndike's work has demonstrated,[14] and may even be traced in the texts of Robert Fludd, John Evelyn,[15] Robert Boyle, and Elias Ashmole.[16] Here human physiognomy was not only tied to the knowledge of the animal world, but was made to serve as a sub-division of the magical world of animated nature. It was the latter aspect which led to the persecution of many physiognomists on religious grounds, it being judged blasphemous to forestall Providence by divination and fortune-telling. As early as 1619, the rector of the Jesuit school at La Flèche advised Mersenne that natural, as against astrological, chiromancy was not to be condemned- provided it did not exceed its proper limits.[17] Nonetheless, its use as a method of divination from form and feature most probably led to physiognomy being forbidden by English law from the time of Elizabeth. By an Act of Parliament in 1743, indeed, all persons 'pretending to have skill in physiognomy were deemed rogues and vagabonds, and were liable to be publicly whipped, or sent to the house of correction until next sessions.'[18]

This proscription cannot be invoked as an explanation

for the oft-remarked decline of interest in physiognomy in the mid-eighteenth century. There is no record of anyone ever having been charged for practising what was so heavily censured. Instead, as I hope is clear, this decline must be accounted for by the various and complex developments in art, aesthetics, criticism and ethics we have charted in Part One of this work. By the late 1760s, however, a debate was inaugurated concerning the physiognomical tradition and the methods of the art, centering particularly on the question of what material physiognomy should rely upon and whether or not it should limit its investigations to man.[19] The theological implications of a possible revival of physiognomy were also discussed. The major focus for all these debates was a text often attributed to Aristotle: the Physiognomonica.[20] As Thomas Cooper remarked quite justly in 1790, 'this work of Aristotle, appears to have served as a foundation for almost every physiognomical treatise that hath since been published.'[21] For this reason, it will be useful to dwell briefly on this work to see what manner of approaches to physiognomy were set out and to understand how powerful its prescriptions were for the succeeding 2000 years.

The Physiognomonica begins by referring to three methods of character analysis each of which it states to have had supporters in the past. The first took as the basis of physiognomical inferences similarities in appearance

between the various races of mankind and between the sexes; 'Too black a hue marks the coward, as witness Egyptians and Ethiopians, and so does also too white a complexion, as you may see from women.'[22] The second took as its basis the characteristic facial expressions accompanying states of mind and looked for muscular traces of thoughts and emotions in the face. The third and historically most important approach sought to find similarities between men and women on the one hand and beasts on the other. Here, the animal is pre-assigned a typical quality- the wild boar is ferocious, the lion noble, the deer timid, the fox mischevious, the snake mean- and a typical appearance. The lion has thin and pendulous lips, and so, the treatise argues, a man with similar endowments must have a strong streak of nobility coursing through his veins. Similarly, 'Lips thin and hard with a prominence about the eye-teeth are a sign of base breeding, on the evidence of swine.'[23] This set of correlations based on certain notions of the constancy of animal species had its origins in popular beliefs and in folklore;[24] what is happening in the Physiognomonica is that human differences are being used to map differences between animals- the exact converse of using animal types to map differences in human natures. (In any case, strictly human characteristics like courage imply moral choice and deliberation which no animal has. So animals are only courageous, mean, proud, noble and so forth in a metaphorical or at least extended sense).

In what is in essence a theoretical account of different procedures, pseudo-Aristotle notes that what we should term the 'pathognomical' approach (the second outlined above) can run up against a number of difficulties. The same features may belong to different characters; a person can adopt or steal a particular expression and so give the lie to his or her true feelings; and any number of signs presented by the face alone cannot generally be sufficient to allow a conclusive identification. Even if the whole bodily frame is used in evidence, how, the author asks, can one account for appearances given that 'soul and body are affected sympathetically by one another'.[25] 'Permanent bodily signs will indicate permanent mental qualities, but what about those that come and go? How can they be true signs if the mental character does not also come and go?'[26]

The solution taken is neither to concentrate on one feature of the body (as does say, Le Brun), nor to lay emphasis upon the fixed rather than the movable parts of the body, nor to despair as so many eighteenth-century figures did of ever being able to tell true character from the appearances of 'actors'. Instead, the Physiognomonica offers a 'complete list' from which significant indicators can be drawn: 'movements, gestures of the body, colour, characteristic facial expression, the growth of hair, the smoothness of the skin, the voice, condition of the flesh, the parts of the body, and the build of the body as a whole.'[27] This done, some

particular physiognomical readings are offered; these are terse and generally drawn from analogies with animals, less frequently on the basis of sexual and racial comparisons and contrasts. Underlying these are three theoretical conclusions.

Firstly, signs must be consistent with one another;[28] secondly, certain states of mind have no actual bodily manifestations;[29] and lastly, signs springing from active and intelligent expressions are more valuable than those which are merely muscular or structural characteristics.[30] These conclusions, it should be said, do not actually surface in the practical physiognomical studies in the treatise but they are the result of analytical deductions based on the three comparisons sketched above.

What should be stressed before we turn to Lavater's work is that the rudimentary classificatory approach set out in the Physiognomonica provided the starting point (and in many cases the end point as well) which was later extended and amended as new species and peoples were discovered, and then overlain by further correspondences established in nature, the cosmos and through time. The physiognomy that resulted was flexible and practicable and as we have suggested and others have shown, it was widely used. But the mode of analysis imposed severe limits on the range of physical and psychical characteristics available for study. Only those shared by men and women, or men and beasts, or primitive and civilised,

formed part of the discourse of physiognomy. This limitation was crucial both in restricting the growth of physiognomy at a time when a decisively particularist and open-ended approach would have served to undercut generalist positions, and also in providing a launching pad for Lavater's own system.

* * * *

The renewed interest in physiognomy in the late eighteenth century grew up in the shadow of the Physiognomonica.[31] But by the start of the nineteenth century it was clear that physiognomy- we should say, as did contemporaries, the 'new' physiognomy- was associated with one man only- Johann Caspar Lavater. With the publication of his Physiognomische Fragmente between 1775 and 1778,[32] the whole history of the subject took a new turn and a new lease of life. When the author died in 1801, a leading British periodical acknowledged that he had been 'for many years, one of the foremost men in Europe.'[33] The Gentleman's Magazine in an obituary of the physiognomist described the initial reception of the work but by speaking of it in the past tense wholly misjudged its continuing appeal.

> 'In Switzerland, in Germany, in France, even in Britain, all the world became passionate admirers of the Physiognomical Science of Lavater... In the enthusiasm with which they were taught, they were thought as necessary in every family as even the Bible itself. A servant would at one time scarcely be hired till the

> descriptions and engravings of Lavater had been consulted, in careful comparison with the lines and features of the young man's or woman's countenance.'[34]

The European Magazine was more terse in its assessment of the importance of the work, but reflected the general attention it received when it noted that 'it deserves the inspection of all mankind.'[35] The most impressive testimony of the revived interest in physiognomy in general and in Lavater's work in particular comes from its publication record. Notwithstanding the views put forward in the Gentleman's Magazine, physiognomy did not die a death with its founder in 1801. Nor was its impact restricted to ruling elites in search of dependable house staff.

In 1789 there began to appear two editions of Lavater's work. The first, a lavish 5 volume, 30 guinea, gilt-calf edition edited by Henry Hunter: Essays on Physiognomy; Designed to Promote the Knowledge and the Love of Mankind (1789-98). This set once completed reproduced over 800 superb engravings and was reviewed at its appearance as 'the finest book which has ever appeared in this or any other country'. An exaggeration, no doubt, though the early German, French and English editions of Lavater were handsomely printed; Hunter's had the additional merit of containing three plates by Blake, who also did a fine frontispiece for Lavater's Aphorisms on Man in 1788[36] (Henry Fuseli did many illustrations for

a French edition of the Fragmente).[37]

The second edition to begin appearing in 1789 was a 3 volume set prepared by the Radical Thomas Holcroft, friend and associate of Paine and Godwin.[38] Holcroft was to become the most prominent of the many English translator's of Lavater's work and he more than once deployed physiognomical characterizations in his own fictional works.[39] His edition was titled: Essays on Physiognomy; for the Promotion of the Knowledge and Love of Mankind; Written in the German Language by J.C. Lavater, and Translated into English by Thomas Holcroft (1789-93). These two editions, one priced beyond the reach of any but the richest, the other reissued at least 18 times in the next 80 years priced from 3 guineas to 3 shillings and sixpence- one for the rulers, another for the ruled, one might crudely say- were quickly supplemented by others. Samuel Shaw undertook another translation and published in 1792 Physiognomy; or the Corresponding Analogy between the Conformation of the Features and the Ruling Passions of the Mind, a new and 'improved' edition of which was called for in 1827. C. Moore issued a new, 'down-market' translation entitled Essays on Physiognomy, Calculated to Extend the Knowledge and Love of Mankind (1793-97) and shortly afterwards, George Grenville brought out The Whole Works of Lavater on Physiognomy; Translated from the Last Paris Edition (1797).

The most durable edition, as we have indicated, was that produced by Holcroft; abridged versions were issued in 1793, 1800, 1806, 1808, and 1825. By 1810, a version of the Physiognomy had appeared in one guise or another in sixteen German, fifteen French, two American, two Russian, one Dutch, and twenty English editions.[40] Holcroft's abridgement was taken up by the London publisher of cheap books, William Tegg, and published in 1840, 1844, 1850 (twice), 1853, 1860, 1862, 1867, 1869, and again in 1878. Tegg also provided the market with other versions of what was essentially Holcroft's text: Essays on Physiognomy (1827, 21 shillings) Physiognomy: a New Edition (1869, 12 shillings; 3 shillings and sixpence), Physiognomy. Abridged (1876-77, 3 shillings and sixpence; 3 shillings)- to name but three. The basic editions of Lavater's text were little more than an advance guard of the physiognomical invasion, for the doctrines in a multiplicity of forms appeared in countless abridged, popular, practical, marital, familial, medical, improving, moral (and immoral), comical, caricatural and even cartoon 'Lavaters'. A full account of the genuinely popular and radical impact of physiognomy would require a detailed study of these intellectually marginal but politically and culturally crucial texts. This, unfortunately, we have not the space to carry out.

What should be clear however, even from our cursory look at the publication record is not only the immense diffusion of Lavaterian ideas, but the difficulty one faces in

seeking to establish an 'authoritative' text. Moore's version, for example, first appeared in The Conjuror's Magazine or Magical and Physiognomical Mirror in 1792-93, and again a year later with the even more antiquarian appeal of The Astrologer's Magazine; and Philosopher's Miscellany.[41] To give another case, Samuel Shaw's edition sought to bring Lavater's work squarely within the doctrine of ruling passions by omitting and adding sections at will.[42]

It must be said in addition that Lavater himself- poet, philosopher, theologian, physiognomist- continues to occupy an obscure and uncomfortable place in the intellectual landscape of Europe. Important enough to figure in specialised studies of illuminism, mesmerism and characterology, he has found himself passed over lightly or in silence by general historians of medicine, religion and literature (when he is not infrequently labelled boldly as the 'father of phrenology'). The out-stretch of his interests, his vast network of admirers, collaborators, friends and correspondents, and his shifting and idiosyncratic religious and political affiliations suggest a man of many surfaces but of little substance. Yet his impact upon subsequent generations of artists, novelists, critics and sientists would seem to imply a more solid, cogent and coherent presence. Even though we may remember him as the author of the Physiognomische Fragmente, it is apparent that he himself assigned relatively little importance to this part of a very

full life's work, that he was unhappy with its reception and with the many amended and edited versions of the treatise that subsequently appeared without authority under his imprimatur, and that numerous contemporaries including Zimmermann, Goethe, Lenz and Herder supplied materials and even wrote passages for the book.[43] Aspects of this collaboration on what one later commentator termed Lavater's 'pipe and tobacco'[44] have been studied, but its precise nature remains clouded in mystery, the solution to which probably lies buried within the mass of Lavater's many papers, sermons, drawings, essays and notebooks scattered in Europe.[45]

On the continent Lavater has attracted attention for his theological writings, but little by way of consensus has emerged; he has been praised and denounced as anything from a Jesuit to a free-thinker, an atheist to a mystic. Beyond the labels of 'genius' and 'madmen' so often applied to him, Lavater appears to defy definition and classification. Returning home after a meeting with this 'inexhautible prophet', Cambry searched in vain for a contemporary parallel. He could find none. Lavater was, he concluded somewhat despairingly, a historical *pot-pourri*: the bastard son of an ancient Pythagorean, an Orphean, an Essene Jew, a Diocletian martyr, a medieval heretic, a Hindu fakir, and a Lappish clown![46]

It will be seen that this wide variety of assessments

and texts, coupled with the large gaps in our knowledge of Lavater's work and career, imposes definite limits on the kinds of questions we may ask of his physiognomy and its impact. We cannot take as a starting point 'a' Lavaterian text and seek to trace from it lines of influence as if these originated from a pure and unitary centre. The wide dispersion of Lavaterian ideas, like that of the ideas of Gall, Spurzheim and Combe to which we shall later turn, entailed considerable distortion. A set of postulates governing the relations of inner to outer man was deployed to serve a variety of ends, amongst these, environmentalism, hereditarianism, materialism, determinism, political radicalism and conservatism, ameliorism and moral improvement. To make matters even more complicated, almost every translation from the German and the French offered a different text with different illustrations. A complete chapter could be written simply elucidating these distinctions, but one example will have to suffice. The presentation of the role of environment in shaping character differs markedly in the editions of Hunter and Holcroft as well as in those published in Paris and Leipzig. A failure to account for these distinctions has given rise to a series of entertaining but uninformed debates in portions of the secondary literature.[47] This is a trap we must avoid at all costs, and the protection we shall seek is in focusing on one text mainly: that of Holcroft (though we shall, occasionally accentuate

some points by comparison with other editions).[48]

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The evident appeal of the Physiognomy (I return here briefly to speak of the phenomenon, rather than a text) was based on a number of factors. The first was the established reputation and popularity of its modern-day 'founder', a reputation spread through Europe by his well-known correspondences and friendships with figures like Herder, Moses Mendelssohn, Mme. Roland, Zimmermann, Mme. de Stäel, Mary Empress of Russia and many others.[49] Distinguished as an ebullient intellect and brilliant conversationalist, Lavater's immediate renown was probably founded on his preaching which was attractive (and, we can now say, novel) in its simple, rhetorical, emotional style.[50] His humility along with a pronounced mystical bent acted like a magnet,[51] and Lavater was sought out by artists, intellectuals, writers and aristocrats.[52] The English gentleman's compulsory tour on the continent was not infrequently diverted to Zurich for an audience with the famous author- Charles Fox and William Pitt both paid him visits.[53] Recording his own trip, William Coxe wrote that 'The insinuating address of Mr. Lavater, the vivacity of his conversation, the amenity of his manners, together with the singularity and animation of his style, have contributed more to diffuse his system and principles, than sound arguments or deep learning.'[54] As early as 1777, Lavater was summoned before the Austrian Emperor Joseph II for an

exchange of opinion on the merits of physiognomy.[55] Ten years later, he was further honoured when Prince Edward of England, afterwards Duke of Kent and father of Victoria, visted him in Switzerland and passed on a request from the Queen for a personal message. A man of many talents, evidently, Lavater responded with a 'Word on the Human Heart'.[56]

Next, we should not neglect that Lavater was a very astute and careful propagandist for his 'new science'. He wisely broadened the scope of his researches by including many insightful sketches of famous personalities from different countries.[57] Heroes of antiquity jostle for position with poets, religious leaders, philosophers, princes and artists. Over 800 historical figures and contemporary personalities gave the work great topical interest, and not surprisingly in countries where the Puritan suspicion of the veneration of images still held force, also added to it a hefty measure of *succès de scandale*.

The Physiognomy was expressly written in a vivid and colourful style, which it should be said, many found to be pretentious, rapturous and exaggerated, even unreadable.[58] It managed to combine, at times uneasily, do-it-yourself formulas for home and street analysis, uplifting passages on religion and morality, frequent reassurances that physiognomy had no connections with the frivolous or black arts, and many resorts to the category of 'common sense'.

The appeal to common sense will be judged to be little more than a rhetorical device, but we should not be led to dismiss Lavater's general methodological claims as veneer. Even two centuries after it was written, it remains striking how well Lavater put his case, how judiciously the insinuated admissions of modesty and frailty were mixed with dogmatic claims to truth.[59] The Essays on Physiognomy does not declare another 'Copernican Revolution'. To begin with, it offers in its place a quiet and captivating confession of ignorance: 'That I understand but little of physiognomy, that I have been, and continue daily to be mistaken in my judgement.'[60] Lavater admits at the outset that 'I daily meet a hundred faces concerning which I am unable to pronounce any certain opinion.'[61] A disarming and possibly incapacitating start, it seems, for what later turns out to claim a new scientific breakthrough.

In a way, Lavater's stance is in direct contrast to that adopted by Le Brun; instead of purported dogmatism, Lavater reiterates *ad nauseam* that his project is intended explicitly as a series of fragments, as consciously shapeless and unmethodical.[62] To be sure, the claim is a welcoming invitation to the reader beckoning him or her to come closer to 'the touch of nature'. The purported openness and one might say 'amateurishness' of the enterprise is designed to make physiognomy widely available and accessible. Furthermore, when Lavater repeats 'I neither can nor will state anything but what is known',

his intention is firmly to disengage his own discourse from the centuries-old stigma, scandal and secrecy which had cast physiognomy as one of the divinatory black arts.[63]

The apparently ritual obeisance to common sense, to an empirical tradition, serves a number of functions: it provides the possibility of a 'new' discourse, of one that is resolutely public, and one which is open to the broadest ranks of readership and discipleship. Finally, it serves to differentiate previous physiognomies which Lavater contends are repetitive and empty. The Physiognomonica is severly rebuked for want of logical consistency, for severe structural deficiences, and for a lack of empirical content.[64] Herder, on the other hand, is treated with more respect precisely because his remarks on physiognomy were unsystematic.[65] The difference between the two is that pseudo-Aristotle's text contains very little raw material which Lavater can refer to for his own discourse, it contains no unworked or direct testimony which can be used for Lavater's own 'logic of corporal varieties'.[66]

To explore Lavater's text more profoundly, it will be necessary to grapple with the place within it of method, for it is this we shall argue, which places the work within the context we have described in Part Two, and which will account for its enormous popularity and impact in Britain.

The discourse Lavater seeks to establish is one based on common sense, a systematization of what for centuries, he claims, philosophers have taken for granted. Moreover, what is taken for granted more than anything else is language, often judged to be a transparent medium for the communication of ideas, and language too is 'entirely physiognomical'.[67] To the critic who thinks that 'Our languages are exceedingly barren of physiognomical terms; were physiognomy a true science, the language of the vulgar would have been proverbially rich in its terms',[68] Lavater answers by referring to 'proofs of the contrary from Homer, Suetonius, Martial, and a hundred others.'[69] By so doing, he has made the initial criterion of scientificity dependent on the 'language of the vulgar'.

By relying in such loose terms on common sense and common discourse, the Essays on Physiognomy anticipates the most obvious critcisim, namely that physiognomy is nonsense, and another incarnation of the mysterious arts. On the contrary: 'I teach no black art', says Lavater, 'I do but teach a science'.[70] Physiognomy then is the 'science or knowledge of the correspondence between the external and internal man, the visible superficies and the invisible contents.'[71] In addition to the appeal to common sense, we should note the tension in the text between the demands of empiricism and rationalism, between the decisiveness of 'facts' and the pressing need to formulate a new science which will submit to rules (phy-

siognomy may claim to be scientific in large part because it can be 'reduced to rule').[72] 'Whenever truth or knowledge is explained by fixed principles, it becomes scientific, so far as it can be imparted in words, lines, rules, and definitions'... 'blind chance and arbitrary disorder constitute the philosophy of fools.'[73] These two claims- that physiognomy is a developed common sense and is also rule-governed- are not contradictory, for the rules themselves are generated by induction.

Induction in this case is intended in the Baconian sense as Lavater shuns deduction in preference for the gradual and painstaking accumulation of facts; the latter alone are finally decisive. 'Arguments cannot dispose of facts.'[74] So physiognomy would appear to be above all the practice of collecting, weighing up, collating, and otherwise organizing the evidence of the senses. 'Facts', Lavater writes in an important passage, 'the actual state of things in nature must decide; consequently observation and experiment are requisite.'[75] The distance Lavater has taken from eighteenth-century notions of raising and improving nature is a broad one. But how else does the reliance on 'facts' constitute an important departure in the realm of characterology?

First of all, the necessity for observation reduces the importance placed on the accumulated wisdom of past physiognomies. Lavater advises his disciples to spend no

more than a fortnight reading previously published texts on the subject. These are repetitive, 'like beads on a rosary'.[76] Observation turns the student's attention to the world as it stands, but Lavater is insistent that 'observing' is not 'seeing', and 'experimenting' not the same as 'experiencing'. So observation is constitutive of physiognomy.

The reliance on facts has, then, the second effect of constituting physiognomy as a method rather than as a developed body of data. Indeed, it is helpful to consider what Lavater is inaugurating in the text as being a *science* of *physiognomical perception*. These three terms are initially defined in terms of their opposites, and then elaborated through the verbal and illustrative examples in the text. Thus, physiognomy is contrasted to pathognomy; science to philosophy; and perception to sensation. In other words, having staked out his terrain in broadly theoretical terms, Lavater then proceeds to defend it and create its practice through images and commentaries on these images with rules, examples and what he terms 'physiognomical exercises'.

Briefly, *physiognomy* deals with man's character and stable features rather than with his passions and expressions, the latter being the province of *pathognomy*. The two discourses were, as we have seen, almost always mixed up or inadequately differentiated before Lavater,

and his creation of physiognomy as a 'new science' is largely due to having separated it from pathognomy. Next, *scientific* physiognomy has as its object the arranging, specifying and defining of those stable features, while *philosophical* physiognomy (or rather philosophical pathognomy) is what we would term the physiology of expression- the domain investigated by Descartes, Le Brun, James Parsons, Cureau de la Chambre and John Bulwer before Lavater, and following his own work by Charles Bell and Charles Darwin.[77] And lastly, having defined his perceptual object as those stable features of the body observable from the exterior, Lavater distinguishes the physiognomical *sensation* from the physiognomical *perception*. The first is a universal attribute of all creatures, a vague understanding reproduced in language that form speaks of content; the second a faculty that man alone can develop and which allows him to think rather than feel physiognomically. In an obvious and banal, but nevertheless important, sense we can say that the physiognomist sees things differently. More exactly, he or she assumes that the body speaks, and also recognizes that before its language can be deciphered a range of obstacles needs to be overcome. The body will always tend to babble, to revert to a state of apparent disorder, and this anarchy needs to be dissolved not by the adoption of easy aesthetic categories which would siphon off potentially important messages, but by acute visual penetration.

This returns us again to the distinction made between

seeing and perceiving, experiencing and experimenting. The seeing, experiencing physiognomist has no focus but what is on the horizon or what is in immediate contact with his body; his vision is limited by the laws of perspective or the laws of physiology. He sees the whole or a blur coloured by affection or hate (or by another impeding emotion) without discrimination on a physiognomical basis, without even the most elementary distinctions between what is relevant and what irrelevant. If the eighteenth-century world is one divided into the actors and the spectators, the world at the turn of the century is one fissured into the observers and the observed. 'All men who have eyes', Lavater writes, 'have talents to become physiognomists'. 'Yet', he adds, 'not one in ten thousand can become an excellent physiognomist.'[78]

The distinction between the one and the 9,999 is the distinction between sensation and perception. In fact, the classification is more complex in the Essays on Physiognomy since there is a gradual scale of perception which subtly weaves its way through the text (and as we shall argue through the images as well). The whole work appears at first glance to be bathed in a sea of visual metaphors: the physiognomist is asked to look at his subjects, to gaze, contemplate, scrutinize, snatch a glance, steal a look, gloat, fasten upon, fix upon, survey, eye, gape, stare, behold. The first casual glance remains an insufficient basis for physiognomical perception, doing

no more than prompting physiognomical sensation. So the man in ten thousand has trained his eyes, has so refined his visual perception, that he can 'observe more than ten thousand of the observant, produce more than ten thousand of the productive.'[79] 'Nothing can appear more easy than to observe', writes Lavater, 'yet nothing is more uncommon'.[80] At the heart of the new, scientific physiognomy is a novel 'art of seeing'- just that ability lamented by Hogarth and Fielding, and judged by them necessary before physiognomy could become established as a means to see through deception and deceit. The 'art of seeing' was their term; Lavater's is 'physiognomical perception'; another is 'optic power'. Accepting that the body is legible, that it is possible to 'read the mind's construction in the face', a critic in The Reflector noted in 1810-11, it remains that,

> 'In every species of reading, so much depends upon the eyes of the reader; if they are blear, or apt to dazzle, or inattentive, or strained with too much attention, the optic power will infallibly bring home false reports of what it reads.'[81]

This optic power, or physiognomical perception, strains for verbal description in Lavater's text, and we might be tempted to view the many descriptions of it as substituting for what is at heart a theoretical problem. But the prolixity of empirical vocabulary, of visual metaphor, serves a definite function. Each *kind* of look can fathom different regions of the body, penetrating to hidden layers of meaning, and literally prising off deceits, postures, affectations, pretences and hypocrisies.

The look breaks down the normal interplay between gaze and expression, as we shall see when we discuss the political impact of Lavater's work. But other aspects of physiognomical perception need also to be highlighted. For perception or observation to be a foundation for any knowledge, be this physical, physiological or physiognomical, this must be precise, as we noted in our discussion of Herschel's Baconianism. This Lavater notes very clearly: 'Precision in observation', he writes, 'is the very soul of physiognomy. The physiognomist must possess a most delicate, swift, certain, most extensive spirit of observation. To observe is to be attentive, so as to fix the mind on a particular object, which it selects, or may select, for consideration, from a number of surrounding objects. To be attentive is to consider some one particular object, exclusively of all others, and to analyze, consequently, to distinguish, its peculiarities.'[82]

From a crude sensation, the physiognomical student is instructed by Lavater's work how to increase his or her optic power both by continual practice and by relevant attention. From A to B then, the physiognomist is helped to turn 'calmly, but determinedly, from indiscreet curiosity' to the scientific summit of the singleness of eye.[83] Underlying the *how* of perception lies the *what*. Lavater's method is only developed to claim its object: those significant parts of the body which Lavater sets out in his '100 Physiognomical Rules'. The problem of dissim-

ulation continually intrudes however. The object of physiognomical perception seems often to be tantalisingly out of reach. Even once the nose, lips, forehead, eyes, chin, have been labelled as semiotically important, perceptual problems will disturb easy vision. For this reason, Lavater accepts that the eye unaided may prove insufficient to unmask true character, and that a 'third eye' may be required. This may be the magnifying lens, the 'solar microscope' or indeed the silhouette, fashionable in the latter half of the eighteenth century and given intellectual prestige by Lavater's work.[84]

The precision required in observation is matched by that required in description. Lavater demands that by carefully noting down what is perceived, the physiognomist should be able afterwards to draw the figure according to this verbal description alone.[85] The physiognomist is to develop the visual power of artists; drawing is the natural language of the physiognomist.[86] Again we may see here a crucial break with the positions we have described in the first part of this study: here there is to be an equivalence of the verbal and the visual. But if the visual is to be re-thought afresh and injected with new powers, what of the verbal?

Lavater's response is to seek to vastly expand the language of description, distending and deforming the dictionary as suits the demands of perception. 'Language', he says, 'can never be sufficiently studied'. Nor, it

becomes apparent, can it be too enthusiastically exaggerated. To those still gripped by the discourse of conventional aesthetics, of general descriptions, freedom lies in developing 'A register, the most perfect that can be obtained, of all characteristic countenances (as) a very necessary aid for the student, which he must compile from the writings of those who have known men best, and from his own observations.'[87] Such a register should include invented, freshly minted, and portmanteau expressions. Anything, in fact, which could disengage perceptual difference from the uniformitarianism of the first glance.

With precision, determination, scrutiny, focus and time, scientific physiognomy can penetrate far deeper than was managed by previous philosophically-based systems.[88] Symbols which were formerly hidden will now be revealed.[89] 'Physiognomy is a source of the purest, the most exalted sensations: an additional eye... Where the dark inattentive sight of the inexperienced perceives nothing, there the practical view of the physiognomist discovers inexhaustible fountains of delight.'[90]

There are, naturally, a number of problems with the kind of concentrated, lingering vision Lavater wishes scientific physiognomists to practice. All physiognomists and opponents of physiognomists knew that character could be feigned. The changing appearances of man were

judged, as we have seen, to pose a grave question mark over eighteenth-century attempts to develop systematic physiognomical positions. But Lavater's physiognomy is unconcerned with changes of character or appearance. It is the 'knowledge of the powers and inclinations of men', not 'the knowledge of the signs of the passions.'[91] 'Physiognomy, therefore, teaches the knowledge of character at rest; and pathognomy of character in motion.'[92] The differentiation, we may note, is intended to serve practical ends, but functions in addition to sever physiognomy proper from divination. Lavater wishes to know what character is, not what it may become.[93]

To discover stable features, physiognomy must alight on immobile figures, unless the physiognomist has been trained and is long experienced. The ideal conditions for perceiving and describing are those reproduced in the artist's studio.[94] Better still, the stable figure should be mounted like a statue on a pedestal which can be rotated, thus allowing a view 'from head to foot, before, behind, in profile, half profile, quarter profile.'[95] This artificial context is liable to strike us as running against Lavater's intentions to be faithful to nature, and to accurately reproduce the given in description. To understand what is involved at this point, and to see the extent to which Lavater seeks to resolve the problems we treated at length in our discussion of eighteenth-century aesthetics and

criticism, it may be well to consider an example from his work. By this means we shall also be able to grasp how physiognomy is imparted through the images in the text and how this imagial aspect stamps physiognomy with its novel character.

* * * *

The example I have chosen concerns a figure who attracted both opprobrium and respect; the first, one might say, for his body, the second for his mind. The figure appears and reappears in almost every physiognomical and anti-physiognomical treatise, at least by name- Socrates.[96] The problem Socrates poses is his fractured presence, the combination he offers of proverbial wisdom and equally proverbial ugliness. According to traditional accounts, the ancient physiognomist Zopyrus is said to have judged from the philosopher's appearance that he was inwardly dull, brutish, sensual and addicted to the vice of drunkenness.[97] This assessment was put before Socrates by one of his less than respectful pupils, who received the retort that although all the Egyptian had presumed was indeed correct, Socrates had managed to elevate himself by the persistent pursuit of learning and wisdom.

The case is in many respects a variant on the age-old problem of dissimulation, and Lavater's approach to it forms part of his general treatment of what he terms 'altered physiognomies'. Substantially, his response is to argue that only pathognomy can be misled by the

deceptions of the conscious hypocrite or the 'reformed' character, and that the changes of the body can only manifest themselves on the most superficial level of expressions. One might also use the example to probe Lavater's conceptions of the various roles of heredity and environment in the constitution of character; here Lavater's apparent stress on the fact that Socrates was an exceptional case would seem to place him in the 'determinist' camp.[98] We shall return briefly to this issue. Meanwhile, it is manifest that this response is the easiest to make. The easiest and the commonest as well- and many did indeed picture Socrates as a natural freak, as an exception to the rule that goodness resides in beautiful vessels and evil announces itself in ugliness.

But Lavater moves instead in the opposite direction so as to make that rule the exception and the exception the rule. His claim is not that the 'good' is the 'ugly', but rather than such terms are inapplicable to physiognomical discourse- they are as useless, he says, as those of 'good' and 'poor' health would be to the physician making his diagnoses. The old 'letter of recommendation' in other words is re-written. If there is a rule it is that both sides of the equation are complex terms: appearance is perceived through a refined visual perception which breaks down uniformitarianism and described similarly through the expanded vocabulary of physiognomy. The mind, too, is made up in difference. Though 'mind'

and 'body' correspond in a harmonious interaction, each is inconsistent and contradictory. This, Lavater contends, is something the Greeks, like the neo-Classical theoreticians of Ideal Beauty, were unable to conceive. Socrates was living proof that man could change, that there existed a complex pattern to his mind and body, and that he could not be slotted into preconceived categories. Socrates broke the rules established by previous physiognomies which, as we have seen, sought to establish correspondences on pre-given categories based on race, sex and animal-human comparisons(see Porta's Socrates-as-deer, plate 12).

Once we look at the images of Socrates which Lavater provides in his work, it becomes apparent that these do not stand in any easy or stable relation to the text. They may, and do, serve a variety of ends. Most powerfully perhaps, they function to demonstrate the manner in which conventional aesthetic categories and perceptual systems impose themselves on purportedly mimetic representations. One portrait of Socrates in Lavater's work derives from Rubens, an artist widely celebrated for his local, concrete, particular work, an artist censured by Reynolds and his followers for his mean style but praised by others for his laborious attention to the reproduction of minute detail (see plate 12). Many recognisably similar images of Socrates have percolated through Western art, so much so that Zopyrus's testimony would be hard to credit were it not for the philosopher's

ready acceptance of it. In other words, Rubens has very effectively portrayed a beautified version of Socrates; he has depicted the proverbial Socrates, the fount of all wisdom and virtue and imposed his image of those qualities upon him. Moreover, the interpretation finds legitimation in Socrates's claim that his inner self had improved. Assuming that this improvement would have been manifest on the philosopher's countenance, what Rubens has produced is a 'real' or 'true' image of his subject.

Physiognomy, however, does not strive for truth and reality. Or rather: it does not do so straightforwardly. Altered physiognomies, for one thing, reveal little of importance to the physiognomist and yet they are the true appearance of character (though not the appearance of true character). Rubens may well have revealed Socrates as he really appeared, beard and all, but not the way he really was. The portrait suggests what he (may have) looked like. It is not a representation of how the scientific physiognomist would perceive him.

That Socrates was dead when Rubens depicted him was a drawback to faithful portraiture according to traditional criteria. But not for physiognomical diagnosis and portraiture. We have already seen that an ideal condition for physiognomical inspection would be a body frozen immobile on a pedestal. We might have added that Lavater's rather macabre imagination perceived an

even better situation. The living presence does not offer an unambiguous source of reference, for the living actor actually impedes the observer's search for true character. So, muses Lavater, how ideal it would be if his own science could confront a world populated only with dead bodies![99] Dead people he finds always more beautiful than the living, more beautiful because more true, better defined, more proportioned. 'Their settled features are much more prominent than in the living, and the sleeping. What life has made fugitive, death arrests; what was indefinable is defined. All is reduced to its proper level; each trait is in its true proportion.'[100]

One might imagine that such an attitude would effectively rob the living of character, and turn human beings into effigies, or perhaps waxworks totally transparent to the physiognomical gaze. The image of the waxwork has indeed been quite commonly associated with physiognomy- Dr Gwither in 1694 saw the image of man for the physiognomist as being of 'Soft wax (which) cannot receive more various and numerous impressions than are imprinted on a man's face'.[101] And some two and a half centuries later, one may find this passage quoted with evident approval by Isaac Disraeli in a short essay on physiognomy;[102] lastly, we might recall that for a long while Madame Tussaud's waxwork Chamber of Horrors was known as the 'Chamber of Physiognomy'.[103]

This robbing of the mortuaries does not however entail

robbing human beings of their characters. Lavater conceives the essence of character, and to do this he judges it best to ignore the aspects of being which seem at first glance to mark the human as living- his movement, expressions, changing colours and so forth. The dead, the immobile, or those who exist in the mind of the physiognomist are frozen with their real characters, even though this reality will not correspond with what strikes the eye at first glance.

What the physiognomist 'sees', after considerable work, is closer to the 4 other images (of 8) of Socrates which Lavater reproduces in his work (see plate 13). The realist portrait has been used as the datum on which the physiognomist sets perceptually to work, casting off the masks, the flexible armature, the semiotically unimportant. The result is 'unnatural' since it fails lamentably to reproduce the immediate impression, it carries neither shade, nor texture, nor 'feel'. It is not the result of inspiration, but of a physiognomical exercise. One might suggest that whereas Reynolds, Richardson, Burke and others sought to distil detail to produce the beautiful and artificially elevate nature, Lavater proceeds along an equivalent path but in order to produce true character. His intention is not to accomodate but to accentuate. Even so, such images still convey relatively little, for they are, and remain, physiognomical exercises, like the anatomist's skeleton and the map on the geographer's wall. One could think of them as Weberian ideal types,[104]

or better still, one could see them fulfilling a role analogous to Hogarth's images in which he sought to probe the differences between character and caricature. They are, in other terms, a means to articulate theoretical problems through perceptual discrimination, and at the same time, they manage to question the status and the boundary of the visual and the verbal.

To sift the face or body of non-physiognomical matter does not render it into a meaningless space, any more than does its representation by the barest half-outline (see plate 13). Our natural tendency will be to compensate for the *lacunae* by filling the expanse and completing the boundaries. To do so would run the risk of pathognomical confusion. We would produce noise and impede the voice of the physiognomical body. The true physiognomical portrait is delicately poised between character and caricature (to use Hogarth's terms), offering plain legibility rather than on the one hand noise and on the other silence. The body and face speak coherently and intelligibly only to the trained scientific physiognomist, who strives relentlessly to decipher uniqueness in diversity and significance in the uniform. Far from Lavater being a racist who groups together collections of human beings on the basis of apparent similarities, he actually sets physiognomy against all classificatory approaches.[105]

To Lavater then, the body is visible, decipherable,

meaningful. It requires an immense theoretical labour and perceptual acuity to be deciphered. In the Essays on Physiognomy, the image of the body reproduced in the written text may seem to serve as a privileged site or space in which the real is literally transmitted. But in fact this is not so. The 'literal', like the 'naive' and the 'pure' message is always constituted in relation to a convention of literalness, naivety and purity. The image of the body may certainly be read narratively, but to Lavater its function derives precisely from the manner in which it can go beyond the dead end of the verbal, even when the verbal has been extended into new avenues. The image here can enrich, extend and sustain language.

Hogarth, it will be recalled, set down a prophecy concerning the potential developments in the 'art of seeing'. Lavater, for his part, suggests that the physiognomist might at one point equate the visual and the verbal into a new mode of discourse- physiognomy. Of course, the claim that physiognomy succeeds in developing a perceptual language which conjoins two realms kept so firmly apart half a century earlier would seem to be undercut by the very conventionality of the relation of text and illustration in the Essays on Physiognomy. Perhaps 'illustration' in this regard is an inappropriate term since it has implications of a picture which does little more than 'add to' or 'save' words, and so implies a possible redundancy of the image.[106] In any event, the

relation of word and image in Lavater's work is far from conventional. There is a powerful, at times incredible, interplay between the two; so far-fetched did this seem to Lavater's contemporaries that he was often denounced either as a charlatan who had failed to understand what he had written, or as a genius flashed with a truth he could not set down in language. Though word and image in the Essays on Physiognomy lie under the same covers, they do not share the same bed. Lavater strives perpetually to put into question the familial union of the pictorial and textual traditions as he seeks, with the assistance of the word, to place, return and then retain physiognomy in the space of the perceptual.

Relationships between text and image have always been subject to complex transpositions and disruptions, not least because the former is restricted by line, space and form in a way the image itself is not. This freedom is doubtlessly illusory and certainly compromised once the image takes its place in the text, particularly as it becomes intertwined with verbal description and elaborate systems of cross-reference. Of itself the image is polysemous, implying a floating chain of signifieds underlying the signifiers.[107] The caption, the text, criticism and interpretation are all intended to fix this chain. If designed and produced to be set in a text, the image may become swamped, and the liberty of its signifiers repressed. Thus banalized, the image will no longer be worth 'more than a thousand words', as the phrase has

it. On the contrary: it may require bailing out by the thousand-word elucidation. Thus Le Brun's zoomorphic images fail to be supporting not because they have come down to us without a caption but because they were designed to have a caption which they have lost. In this case, the image is underinformed and does not bear the surplus of meaning we might expect to find overflowing from it. That said, the image in a book will need in most circumstances to be treated not only as a possible extension of a verbal statement, but as a statement in itself, one with its own conventions, traditions and grammar rules.

When we turn to Lavater's work we find a development in visual discourse which does not match that in the written text. What is striking (and what requires the conceptual leap this brief theoretical discussion has been intended to facilitate) is that by creating a perceptual space for the imagination, Lavater is disclosing the site of a *praxis*. This imagial site is under constant pressure from the text itself, yet against it that text seems impossibly restricted, flat and impoverished. The designation of the text as a series of fragments is particularly appropriate since on their own the theoretical positions set out do indeed seem disjointed, piecemeal and even contradictory. But the images go some way in soldering the fragments together; they provide a unity-in-development. The coherence of the work as a whole arises as the reader participates in physiognomy, in a physiognomical reading which is invested with

interests.

The images do not mimic reality by giving the stamp of authority to what might, if for example, the verbal description was not embellished, seem a mere fiction. They profoundly alter the nature of the writing, and hence of the reading of the complete text. They do so by breaking down the work's isolation (as a piece of 'writing', as 'authored', as 'inspired', as 'science') and casting it within a network of correspondences which involve reader, text, interests, power, knowledge. The Essays on Physiognomy does not present a pell-mell confusion of still images steadied by captions, but something closer to a filmic sequence. A single, separated image is not sutured to another single snippet of text by cross-reference; it is the struggle of appropriation by the reader of the literal and the figurative which establishes the possibility and the practice of physiognomical science (just as we will contend that it does in many populist phrenological works).

Lavater's images are not of course photographic, and there is no reason to suppose (if we have understood the physiognomical moment correctly) that later developments in photography would have assisted him in his endeavours. The photograph did find a use in pathognomical investigations, but even in this realm its cluttered detail was often baffling.[108] Unlike the drawings we have examined from Lavater's work, the photograph

represents the significant and the insignificant without distinction; it has a curious means of conveying what Roland Barthes has termed *'l'effet du reel'*.[109] It reproduces all without the purity of line or content of the physiognomical depiction.

* * * *

This excursion will have shed light on the genuinely novel aspects of what we have termed Lavater's science of physiognomical perception. It will undoubtedly have raised many issues, most of which we have not the space to follow up now. One question we might allude to is that of the physiognomical audience. In the second part of this thesis we made some bold claims linking the development of a scientific methodology and the constitution of a scientific audience, and relating the classification of knowledge and the classification of groups of men into participators and audience, leaders and followers, actors and spectators. It is encumbent upon us to continue asking questions about audience, seeking once again to do so with the issues we have so far discussed foremost in our minds.

One of the assumptions of Lavaterian discourse is that vision and knowledge, knowledge and power, are coupled; this is more evident in the French editions of Lavater's work where great play is made of the terms *voir*, *savoir* and *pouvoir*. The world is split, as we have shown, into the observers and the observed. This is the equivalent

one might think of the distinction between actors and spectators, and similar to those distinctions Whewell and others of the 'Cambridge Network' sought to make with the scientific community. But there is a crucial difference. Spectators cannot for the most part become actors; and science requires qualities which cannot be learnt without considerable training, breeding and wealth. Science, as we have seen, conceived as a mode of advancing knowledge rather than spreading it, and judged to be the product of a small elitist group of mathematically-trained 'scientists'. Lavater's physiognomical science is quite different; as he said, 'all men who have eyes... have talents to become physiognomists' (and they did not need to have good eyes either- Lavater himself was short-sighted!)[110]

What then of the audience for physiognomy? Two groups were immediate and obvious targets: artists,[111] and members of the medical community.[112] But perhaps some contours can be drawn by looking at who denounced the new science. Many critics, novelists and essayists judged that Lavater had in Herder's pertinent phrase 'revived the noble spirit of observation'.[113] If one may ignore (for the reasons cited above) the substantive positions Lavater seems to establish on ethics, politics and religion, what were the reactions to this 'spirit of observation'? Many, in truth, ran frightened because, as Lavater put it, 'they dread the light of physiognomy', 'trembling lest others should read the truth in themselves.'[114]

To Goethe, it was 'frightening to be in the presence of a man to whom all the confines with which Nature has seen fit to place us appear full of meaning.'[115] Chateaubriand remarked that 'the truth is that most men reject (physiognomy) because they would appear very badly in its light.'[116] When Lavater was introduced to Joseph II, he was immediately put on his guard:

> '"Ah! you are a dangerous man, and I know not whether I may venture to show myself before you;... one must be on one's guard on approaching you!"'

To which Lavater replied,

> '"No honest man need be afraid of me"'

and in case this failed to put the Emperor at his ease, he added,

> '"It is my duty and my pleasure to observe more the good qualities in my fellow-men than their faults"'[117]

Lavater always maintained that there was a strong moral tone stamped upon his work, and upon the practice of physiognomy.[118] And it is true that the book itself opens and closes with an invocation to the deity. 'It was impossible', Goethe recollected, 'for him to understand how a man could live and breathe without at the same time being a Christian.'[119] His aphorisms certainly helped to establish Lavater's theological and ethical credentials in Europe and in England,[120] but the emphasis on observation in the Essays on Physiognomy gives the work a strongly secular flavour.

The reliances on the Bible and on God (the best physiognomist)[121] are secondary compared to the debts Lavater has to straightforwardly ethical arguments. Physiognomy, as the example of Lavater's confrontation with Joseph II is intended to demonstrate, only reveals the good side of man's nature. But this little story only appeared after Lavater's death, tacked onto his work by his anonymous biographer. In the text itself, Lavater goes no further than declaring that physiognomy reveals the moral forms of mankind.[122] The continual use of physiognomical monitoring can detect evil tendencies; its usefulness is precisely that it can forewarn- 'THE PHYSIOGNOMICAL SENSATION', he writes carefully choosing his terms, 'IS THE MOST EFFECTUAL PRESERVATIVE AGAINST THE DEGRADATION OF OURSELVES AND OTHERS.'[123]

Physiognomical perception can clearly cut both ways. It could, and did, reveal good and evil. Servants gazed at their masters; masters gazed back upon their servants. Already in 1786, the English Review forecasted that physiognomists would soon become a national pest, that they would renounce 'the excellent rule of their master, "*jugez peu*"' and intrude into polite society.[124] The prophecy was more than fulfilled: physiognomy did indeed remain a popular and populist characterology well into the nineteenth century, often being mixed, as we shall shortly discover, with phrenology. In a striking reversion to the rhetoric of the eighteenth-century *theatrum mundi*,

an entry in the Encyclopaedia Britannica for 1853-60 noted how Lavater's work had everywhere caused a profound sensation.

> 'Admiration, contempt, resentment and fear were cherished towards the author. The discovery was everywhere flattered or pilloried; and in many places, where the study of human character from the face became an epidemic, *the people went masked through the streets.*'[125]

It is difficult to reconstruct the situation in which seeing, looking, gazing can become such a political act ('political' being defined broadly). Certainly, one could examine a lord or a worker and pronounce him evil, and then generalize to all different classes of men. Lavater himself, early in his career, let loose some remarks on the physiognomy of cobblers in Zurich; the relevant Guild objected and the town Council forced Lavater to retract and to send a letter of retraction.[126] So much for class-physiognomy. Physiognomy can be used in this sense as a political weapon to institute class, racial, sexual and other differences and depreciations.

The method itself, the physiognomical perception, is as we have shown a highly developed mode of visual scrutiny. It is the kind of gaze with which Freud, especially in his later years, used to analyse his guests, which Salvador Dali, one of its victims, described as a stare 'with a fixity in which his whole being seemed to converge'.[127] A look like Lear's: 'When do I stare, see how the subject quakes'.[128] In

a sense the power relation the physiognomical perception institutes is between the observed who have become observers, and the observers who have become the observed. The physiognomist's gaze could penetrate the seeming anonymity of the city and the crowd, make its population seem less enigmatic and unknown, and thus allow more assured participation in urban life. It could be used- and was used by Balzac in his *Comédie humaine*-[129] as part of a social taxonomy. Physiognomy can distil order and transparence from the diversity and seeming incoherence of city life. At its most extreme, such diversity takes on the connotation of disorder and physical danger, with the city's disparate characters harbouring marginal and criminal elements hostile to the dominant orders. Such characters will hide behind masks and vizors, adopt postures and affectations- they will as the Encyclopaedia Britannica said go masked through the streets. For previous generations, clothing had often provided a formalized indicator of rank and calling, but the demise of sumptuary laws and the expansion of the city began to seriously erode the legibility of this sign system. In this situation, physiognomy could provide a new semiotics, even when the result did little more than return to old animal analogies in the tradition of Porta, Le Brun, and the Physiognomonica.[130]

Lavater's physiognomy was far more penetrating and powerful than its apparent predecessors. We have noted some of the problems which eighteenth-century critics of the

subject felt were fatally destructive of physiognomy. Lavater certainly recognised the importance of these, and suggested that to begin with the physiognomist should travel to the asylum, the prison, or the mortuary to examine 'simple' subjects- the mad, the bad, and the dead. These three classes of the human population had two distinct advantages. For one, their physical features and/or mental faculties were more pronounced than average and therefore more easily recognizable. And for another, these subjects either would not or could not attempt to feign natures they did not possess; the mad did not possess the self-identities to allow them to do so, the incarcerated were not permitted to adopt hypocritical stances, and the dead had no reason to do so.

What of the most difficult subjects? Emperors, kings and queens were clearly game for the physiognomist, but there was one species of human being which did seem safe from the scrutinizing, all-seeing gaze of the physiognomist. A species of men and women whose lives were wittled away in secrecy- the self-abusers who seemed at the time physiognomy was becoming established in Britain to be rocking the country into apoplexy. The self-abusers were the onanists.[131] But even these could not hide from the physiognomist, he could after all detect characteristics signs on the masturbator long after the crime had taken place- even before it had done so. R.H. Allnatt, writing on 'excessive

masturbation' in the 1840s, described a patient of his who seemed to defy all normal diagnoses, yet he 'entered the room with a timid and suspicious air, and appeared to quail like an irresolute maniac when the eye was fixed resolutely upon him'.[132] All the more reason for the physiognomist to seek him- or her-out; and to meet the pressing need a special, powerful 'onanistic physiognomy' was pioneered.[133]

* * * *

Having examined some of the connections between the character of physiognomy, its uses, and its appeal to different audiences, we now turn to examine two bodies of thought which are often mistakenly confused with physiognomy: organology and phrenology. Each of these has, as we shall see, its own theoretical foundations, but both at key junctures joined physiognomy. We began our study of Lavater's work by warning against judging a single 'text' by Lavater as the source of a unitary influence through the years. The different editions ensured that such a simple model of ideological transference could never be applied to the physiognomical phenomenon. At times, indeed, 'physiognomy' became such a catch-all, that we would have difficulty recognising any Lavaterian ideas in it at all. 'Studies by Lavater Redivivus' (Plate 14) is little more than a series of vaguely-caricatural sketches; it could have been produced long before the appearance of Lavater's work and merely

cashes in on the popularity of physiognomy. The same could almost be said for Lavater's Looking-Glass; or, Essays on the Face of Animated Nature, from Man to Plants (1800), the work, apparently, of 'Lavater, Sue, & Co'. The volume contains almost everything except a discussion of Lavater's work; physiognomy has become an umbrella term for anatomy, biology, zoology, anthropology, morality, religion. As such, it remains an obvious and attractive target for satire and lampoon.[134]

The wide impact of the doctrines has resulted here in attacks from those who judged it proper that the study of mind and body should be the preserve of 'scientists'; but, as we have seen in Part Two, the constitution of the scientist in a recognizably modern form did not occur until well into the third decade of the nineteenth-century. Until then 'pseudo-sciences' were not under-privileged with respect to 'genuine science'; the categories did not exist in that form. The empirical method, derived from Bacon and driven almost to its limits by Lavater, precluded the classification of knowledge by any other than natural or weakly conventional means. That Lavater's work combined 'psychology', 'anthropology', religion, ethics, philosophy and a dozen other specialisms did not attract adverse comment when it was published. The large claims Lavater made for his subject were matched by the modesty with which he offered himself as its originator. The two systems of thought we shall now turn to share many features in common with Lavater's, and once again

we shall be approaching each looking for methodological foundations, for the posing and resolution of problems, and to see how the character of the knowledge was governed by and itself governed the audience for that knowledge. In the case of organology and phrenology, knowledge was initially constituted in relation to an established or nascent scientific community with its own procedures. How each knowledge developed as a result of that connection, and how phrenology finally renounced 'Newtonian' science as dry, academic, aristocratic and elitist are issues which we shall be addressing. Whilst it would be impractical to refer continuously to the points we established in our chapters on scientific culture, the claims we made there should be borne in mind in the following two chapters.

NOTES: PART THREE, CHAPTER EIGHT

1. See Homer, Iliad (trans. E.V. Rieu), Harmondsworth, 1950, 45. In E.C. Evans's 'Physiognomics of the Ancient World', Transactions of the American Philosophical Society, 59, 5, 1969, 89, there is given a list of some 80 such descriptions from the Iliad and the Odyssey.

2. See The Genuine Works of Hippocrates (ed. Francis Adams), 2 vols, 1849, I, 190-94. Also H.O. Taylor, Greek Biology and Medicine, 1922, 25-26.

3. Aulus Gellius, The Attic Nights of Aulus Gellius (trans. John C. Rolfe), 1968, I, ix, 1-5. Interestingly, Robert Burton later wrote a play Philosophaster (performed in 1617) in which students's characters were likewise examined physiognomically before admittance to a school (see R.A. Pack, 'Physiognomical Entrance Examinations', Classical Journal, XXXI, 1935, 42-43).

4. See A. MacAlister, 'Physiognomy', Encyclopaedia Britannica (11th. ed.), 32 vols, Cambridge, 1911, 21, 550-52, 552.

5. Plato, Protagoras, 309a and 356d. in Plato. The Collected Dialogues, Princeton, 1978.

6. Many of the principal complete texts devoted to physiognomy and a selection of the shorter ones from a wide variety of Latin and Greek writers are reproduced in R. Förster, Scriptores physiognomonici graeci et latini, 2 vols, Leipzig, 1893. My discussion of classical physiognomy is brief, in part because so much commentary has already been produced. The most useful are Evans, 'Physiognomics';

idem, 'The Study of Physiognomy in the Second Century A.D.', Transactions of the American Philological Association, LXXII,1941, 96-108; idem, 'Description of Personal Appearance in Roman History and Biography', Harvard Studies in Classical Philology, XLVI, 1935, 43-84; G.L. Duprat, 'La Psycho-Physiologie despassions dans la philosophie ancienne', Archiv für die Geschichte der Philosophie, XVIII, 1905, 381-396; R. Joly, 'La caractérologie antique jusqu'à Aristote', Revue belge de philologie et d'histoire, XL, 1962, 5-28; A. MacC. Armstrong, 'The Methods of the Greek Physiognomists', Greece and Rome, V, 1958, 52-56; R.A. Pack, 'Artemidorus and the Physiognomists', Transactions and Proceedings of the American Philological Association, LXXII, 1941, 321-34; G. Misener, 'Iconistic Portraits', Classical Philology, XIX, 1924, 97-123; and Josef Mesk, 'Die Beispiele in Polemons Physiognomonik', Wiener Studien, L, 1932, 51-67.

7. See the excellent study of Thomas Cooper, 'Observations respecting the History of Physiognomy', Memoirs of the Literary and Philosophical Socety of Manchester, III, 1790, 408-62, 422-26.

8. See Galen's 'Galeni Liber, quod Animi Mores Corporis Temperamenta Sequantur', in Medicorum Graecorum Opera (ed. C.G. KÜhn), Lipsiae, 1822, IV, 794-95 where Aristotle's physiognomical remarks are treated.

9. 'Galeni Prognostica de Decubitu ex Mathematica Scientia' (in Claudii Galeni Opera Omnia, ed. C.G. KÜhn, 20 vols, Hildesheim, 1964-65, XIX, 530). The view of Hippocrates is quoted with apparent approval: 'Hippocrates igitur et vetustate admodum notus et scientia admirandus, inquit, quincunque exercentes medicinam physiognomonicae sunt expertes, horum mens in tenebras devoluta torpida sensecit. (In those who practice medicine without a knowledge of physiog-

nomy, the judgement goes to seed, wallowing in darkness). The treatise is a commentary on Hippocrates's On the Prognostics and so takes up physiognomical analysis from the remarks of Hippocrates concerning the position of the patient, e.g. reclining, to the right or the left, relaxed, bent double (see Genuine Works, I, 237-38). On Galen, see E.C. Evans who claims (I believe wrongly) that he rather than pseudo-Aristotle laid the foundations for later physiognomical speculation, 'Galen the Physician and as Physiognomist', Transactions and Proceedings of the American Philological Association, LXXVI, 1945, 287-98.

10. See Balstrusaitis, Aberrations, 9-10.

11. See Carroll Camden, 'The Mind's Construction in the Face', in Baldwin Maxwell et al. eds. Renaissance Studies in Honor of Hardin Craig, Stanford, 1941, 208-20; Hardin Craig, 'A Contribution to the Theory of the Renaissance', Philological Quarterly, VI, 1927, 321-33. Studies of 'physiognomy' as used in medieval and early English literature, like those that deal with Elizabethan 'physiognomy', tend to equate physiognomy with any descriptive portrait. More useful are the following studies: Walter Clyde Curry, The Middle English Ideal of Personal Beauty as found in the Metrical Romances, Chronicles, and Legends of the XIII, XIV, and XV Centuries, Baltimore, 1916; D.S. Brewer, 'The Ideal of Feminine Beauty in Medieval Literature, especially "Harley Lyrics", Chaucer, and some Elizabethans', Modern Language Review, L, 1955, 257-69; W.C. Curry, Chaucer and the Mediaeval Sciences, New York, 1926, 3f. and passim; John W. Draper, The Humors and Shakespeare Characters, Durham, 1945; and the many critical remarks in Hardin Craig, The Enchanted Glass. The Elizabethan Mind in Literature, Oxford, 1950.

Lynn Thorndike, Michael Scot, 1965, 87-91, 122-23 is also informative, as is P.A. Robin, The Old Physiology in English Literature, 1911, 3-7.

12. See the Appendix to Cooper, 'Observations', 442-62.

13. See Yates, Art of Memory, 202-03.

14. Thorndike, History deals at many points with physiognomy, most prominently in vols. VII and VIII, esp. chapter 35.

15. John Evelyn, Numismata; a Discourse of Medals... To which is added, A Disgression concerning Physiognomy, 1697, where Bacon, Cromwell and Hobbes are submitted to a physiognomical examination (339-41)on roughly the basis of animal-man correspondences (see also 293).

16. See Thorndike, History, chapter 35.

17. Ibid., VII, 440.

18. See MacAlister, 'Physiognomy', 550.

19. See Cooper, 'Observations', 412-13. We have already mentioned work by Parsons and Clubbe; slightly earlier there appeared two brief discussions in the Philosophical Transactions: 'Account of Wilhelmi Ryne... De Physiognomia, 1683', XIII, 1683, 222-35 (esp. 233); and Dr. Gwither's 'Discourse on Physiognomy', XVIII, 1694, 118-20.

20. There is considerable dispute concerning the authenticity of this treatise, but Diogenes Laertius believed it genuine. Ross (Aristotle, 12) has written that it is 'a combination of two treatises, both perhaps Peripatetic'. For a sample of the debate,

see Valentin Rose, De Aristotelis Librorum Ordine et Auctoritate Commentario, Berlin, 1854 and Richard Förster, 'Handscriften und Ausgaben des pseudoaristotelischen Secretum Secretorum', Centralblatt für Bibliothekwesen, VI, 1889, 1-22, 57-76.

21. Cooper, 'Observations', 417. As Paolo Mantegazza remarked of the history of physiognomy after the Physiognomonica and before Lavater's work: 'Plenty of authors, plenty of volumes, but little originality, and plenty of plagiarism!' (Physiognomy and Expression, n.d. c. 1880, 13; see also Baltrusiatis, Aberrations, 18).

22. Physiognomonica, 812a, 12-14 (trans. T. Loveday and E.S. Forster), in W.D. Ross ed., The Works of Aristotle, Oxford, 1913, VI. As we shall be meeting a charge of racism levelled at Lavater in particular and physiognomists in general a little later, it should be stressed that this remark does not form part of a racist discourse; there was, perhaps surprisingly, very little racism at the time; see Frank M. Snowden, Before Color Prejudice. The Ancient View of Blacks (Cambridge, Mass., 1983), and Fernando Henriques, Children of Caliban, 1974, 7f.

23. Physiognomonica, 811a, 19-25.

24. For a brilliant anthropological perspective, see Claude Lévi-Strauss, The Savage Mind, 1966, 115ff. On the widespread views concerning the constancy of the behaviour of each animal species, see the references in G.E.R. Lyold, Science, Folklore and Ideology. Studies in the Life Sciences in Ancient Greece, Cambridge, 1983, 10.

25. Physiognomonica, 806a, 6-10.

26. Ibid., 808b, 11-12.

27. Ibid., 806a, 27-33.

28. Ibid., 807a, 25; 814a, 10-11.

29. Ibid., 806a, 13-20.

30. Ibid., 814b, 10.

31. See Thomas Cowper, 'Observations Respecting the History of Physiognomy', European Magazine, XIX, 1791, 122-25; anon., 'History of Physiognomy Letter XXIV', Gentleman's Magazine, LXIX, 1799, 948-49; and 'History of Physiognomy Letter XXV', Gentleman's Magazine, LXIV, 1035-36.

32. An earlier version of the work, J.C. Lavater von der Physiognomik, ed. J.G. Zimmermann, was printed in Leipzig, two volumes in one, in 1772, but Lavater in the Preface to Part Two says that the editor's publication was unauthorised and taken from a rough draft. The work was without illustrations and was never translated or reprinted. The first edition of the 'real', authorised, work was printed in Leipzig and Winterthur from 1775 to 1778 as Johann Caspar Lavater, Physiognomische Fragmente, zur Beförderung der Menschenkenntnis und Menschenliebe. For details of the German printing history, see Heinrich Maier, An der Grenze der Philosophie. Melanchton-Lavater-David Friedrich Strauss, Tübingen, 1909, 176-78.

33. The Scot's Magazine, quoted in John Graham, 'Lavater's Physiognomy in England', Journal of the History of Ideas, 22, 1961, 561-72, 561.

34. Gentleman's Magazine, LXXI, 1801, 184.

35. European Magazine, XVII, 1790, 275. A selection of

the magazines and journals in which Lavater's physiognomical work was noted indicates the impact this had: Analytical Review, V, 1789, 454; VI, 1789, 426; XIII, 1792, 427; Annual Register, 33, 1791, 384-85, 394; 35, 1793, 50; British Critic, XVI, 1800, 215 (review of Musaeus, Physiognomical Travels); XX, 1802; Critical Review, LXIX, 1789, 194, 265; European Magazine and London Review, XVIII, 1790, 4041; XXXIV, 1798, 190; Lady's Magazine, XX, 1789, 409-13; Monthly Magazine, IX, 1800, 26-28; New Review, I, 1782, 305; Universal Magazine of Knowledge and Pleasure, LXXXV, 1789, 55; LXXXXI, 1792, 79; CVI, 1800, 359, 423.

36. On Hunter's edition as the finest, see Graham, 'Lavater', 562; also John Graham, The Development of the Use of Physiognomy in the Novel, PhD., Johns Hopkins University, Baltimore, 1960, 110. On Blake's contributions, see Geoffrey Keynes, The Writings of William Blake, 1927, 85, 117; Alexander Gilchrist, Life of William Blake (1863), 1942, chapter VIII.

37. See Peter Tomory, The Life and Art of Henry Fuseli, 1973, 33-34, 196; Marcia Allentuck, 'Fuseli and Lavater's Physiognomical Theory and the Enlightenment', Studies on Voltaire and the Eighteenth Century, IV, 1967, 89-112; Eudo C. Mason, The Mind of Henry Fuseli. Selections from his Writings with an Introductory Study, 1951, 41. Fuseli was disappointed with the quality of reproduction in the French edition (he also did plates for the German). Chodowiecki also contributed to the German edition his considerable talents as an artist; without this, Graeme Tytler has suggested 'Lavater's Fragmente might not have enjoyed quite the popularity they did.' (Physiognomy in the European Novel. Faces and Fortunes, Princeton, 1982, 60).

38. It is difficult to know how much importance to

assign to the fact that it was the radical 'traitor' Holcroft who translated the most popular edition of Lavater's work, for he did so much bread-and-butter translating. For interesting perspectives, see studies which link Godwin and Holcroft: James T. Boulton, 'William Godwin, Philosopher and Novelist', The Language of Politics in the Age of Wilkes and Burke (1963, 207-49); Frederick Rosen, 'Godwin and Holcroft', English Language Notes (V, 1968, 183-86); M. Philp, 'Godwin, Holcroft and the Rights of Man' (Enlightenment and Dissent, I, 1982, 37-42); and V.R. Stallbaumer, 'Holcroft's Influence on Political Justice' (Modern Language Quarterly, XIV, 1953, 21-30). An excellent recent study which alludes to Lavater and Gall (both of which figured in Thoughts on Man), is Peter H. Marshall, William Godwin, New Haven, 1984.

39. Lavater is mentioned briefly in Holcroft's Memoirs but physiognomy does seem widely used in his fiction, e.g. The Adventures of Hugh Trevor, 4 vols, 1801, II, 303, III, 166, IV, 122. (see Memoirs of the Late Thomas Holcroft, Written by Himself; and continued to the Time of his Death, from his Diary, Notes, and Other Papers, 1852, chapter III).

40. Information on the publication history is available from John Graham, 'Lavater's Physiognomy: a Checklist', Papers of the Bibliographical Society of America, 55, 1961, 297-308 and his Lavater's Essays on Physiognomy. A Study in the History of Ideas, Bern, 1979. I have checked and occasionally corrected Graham's work by reference to the British Museum catalogues and also by personal inspection.

41. This edition has, according to Graham ('Physiognomy',

563n), some material omitted from the Holcroft edition, particularly added sections on handwriting, on hair and on beards. I have not examined a copy to make the comparison; compared with Holcroft's, it was expensive and uncommon.

42. A review of Shaw's edition in the Analytical Review attacked Shaw for implying that physiognomy could be equated with the doctrine of the ruling passions; the latter bore some resemblance only to pathognomy (see XIII, 1792, 427-28).

43. See for discussion of these contributions: Eduard von den Hallen, Goethes Anteil an Lavaters Physiognomischen Fragmenten (Frankfurt, 1888); Ludwig Hirzel, 'Goethes Anteil an Lavaters Physiognomik' (Zeitscrift für deutsches Altertum, XXI, 1877, 254-58); and for the letters between Lavater and Goethe from 1777 to 1792, H. Fink (ed), Goethe und Lavater, Schriften des Goethe Gesellscaft (Weimar, 1901). Oliver Guinaudeau's 'Les rapports de Goethe et de Lavater' (Etudes Germaniques, IV, 1949, 213-26) and Jean Hugeli's 'Goethe en Suisse' (Etudes Germaniques, IV, 1949, 253-67) are also useful. On Zimmermann: Heinrich Funck, 'Zimmermann als Characterologe: Sein Anteil an Lavaters Physiognomischen Fragmenten' (Euphorion, XXVII, 1926, 540-57; and Auguste Bouvier, J.G. Zimmermann. Un représentant suisse du cosmopolitisme littéraire au XVIII^{e} siècle (Geneva, 1925). On Herder: Reinhold Steig, 'Herders Verhältnis zu Lavaters Physiognomischen Fragmenten' (Euphorion, I, 1894, 540-57). The German background to Lavater's work will not figure prominently in my study; it has been very well treated in Tytler's Physiognomy.

44. Anon., The Life of John Kaspar Lavater, c. 1850, 82.

45. Many of Lavater's manuscripts remain in Zurich, but

the collection has been dispersed (see the interesting report of Gustav Solar, 'Les restes de la collection de J.C. Lavater, a la bibliothèque de Zurich', Gazette des beaux-arts, 79, 1972, 151-61.

46. Quoted in A. Viatte, Les sources occultes du romantisme, 2 vols, Paris, 1928, I, 173.

47. See and compare, Oliver Guinaudeau, Jean-Gaspard Lavater, Etudes sur sa vie et sa pensée jusqu'en 1786, Paris, 1924, 271; G.T. Clapton, 'Lavater, Gall et Baudelaire', Revue de littérature comparée, 13, 1933, 259-98, 429-56, 268-70; Edmund Heier, 'Lavater's System of Physiognomy as a Mode of Characterization in Lermontov's Prose', Arcadia, 6, 1971, 267-82, 272.

48. Some brief comparisons have been made by particular editions in the work of Tytler, Physiognomy; Guinaudeau, Lavater; Graham, Development of Use; Maier, An der Grenze; and G.P. Brooks and R.W. Johnson, 'Johann Caspar Lavater's Essays on Physiognomy', Psychological Reports, 46, 1980, 3-20. We should also mention Richard D. Lowenberg, 'The Significance of the Obvious. An Eighteenth Century Controversy on Psychosomatic Principles', Bulletin of the History of Medicine, X, 1941, 666-79; P.I. Heisch, Memoirs of John Caspar Lavater, 1842; Heinrich Maier, 'Lavater als Philosoph und Physiognomiker' in die Stiftung von Schyder von Watersee (ed), J.C. Lavater (1741-1801) zur hundertsten Wiederkehr sienes Todestages, Zurich, 1902; Oliver Guinaudeau, 'Au temps du mesmerisme: un fervent adepte du magnetisme animal, le pasteur J.G. Lavater', Etudes Germaniques, XIII, 1958, 98-113, for useful perspectives.

49. See Maier, An der Grenze, 143-263; G. de Reynold, Histoire littéraire de la suisse au XVIII^{e} siècle,

2 vols, Lausanne, 1912, II, 386-87; Madame Roland, Voyage en Suisse 1787 (ed. G.R. de Beer), Neuchatel, 1937, 141; Auguste Viatte, 'Madame de Staël et Lavater d'après des documents inédits', Revue de littérature comparée, III, 1923, 640-50; de Staël, De l'Allemagne (ed. Simone Balaye), 2 vols, Paris, 1968; Edward S. Hajok, 'Lessing's Attitude in the Lavater-Mendelssohn Controversy', PMLA, LXXII, 1958, 201-14; G. Finsler, Lavaters Beziebungen zu Parisin den Revolutionsjahren 1789-1795, Zurich, 1898.

50. See Monthly Review, XI, 1801, 786; Scot's Magazine, LXIII, 1801, 164, for reports on Lavater's sermons and preaching style.

51. See on this, de Reynold, Histoire littéraire, II, 684; von den Hallen, Goethes Anteil, 272ff.; Guinaudeau, Etudes; Heisch, Memoirs; Christian Observer, LI, 1842, 161-81 (reviewing Heisch); and Tytler, Physiognomy, for discussion of Lavater's mysticism.

52. See the excellent study of Fernand Baldensperger, 'Les théories de Lavater dans la littérature française', Etudes d'histoire littéraire, II, 1910, 51-91, esp. 60f for details.

53. See Rudolf Pestalozzi, Lavaters Fremdenbücher, Zurich, 1959, 23, 99-100.

54. William Coxe, Travels in Switzerland, 2 vols, 1791, I, 89-90.

55. See J.C. Lavater, Essays on Physiognomy...also One Hundred Physiognomical Rules, n.d. c. 1880 (18th edition). This is a one-volume edition edited by Holcroft, and contains an anonymous 'Memoir of the Author'. For report of Lavater's meeting, see LXXX-XI.

56. Essays on Physiognomy, CVIII. According to Heisch, a copy of this poem was sent to Queen Victoria in 1838 and acknowledged as an 'interesting present' (Memoirs, 245). Queen Charlotte was a subscribed to the Physiognomische Fragmente (see Tytler, Physiognomy, 332n).

57. Goethe offered a typically-cynical commentary: 'During his travels up the Rhine, (Lavater) had portraits taken of a great many distinguished men, in order to excite their personal interest in a work in which they were to appear' (Johann Wolfgang von Goethe, The Auto-Biography of Goethe (trans. A.J.W. Morrison), 1849, 117-18).

58. See de Reynold, Histoire littéraire, 417; Clapton, 'Lavater, Gall', 441 for comments.

59. A. Ysabeau captured this strain of self-deprecation which courses through Lavater's work with his well-chosen phrase, 'sa modestie un peu exagérée' (Lavater et Gall: physiognomie et phrénologie, Paris, 1862, 2). This aspect of Lavater's work was frequently the object of comment; see, for example, Monthly Review, LXVI, 1782, 483; Monthly Magazine, IX, 1800, 26-28; New Review, I, 1782, 305; Scot's Magazine, LXIII, 1801, 80.

60. Essays on Physiognomy, 4.

61. Ibid., 6.

62. E.g., ibid., 11. In the French edition of his work, this aspect was much clearer, as the chapters were labelled 'fragments' (see Lavater, L'art de connaitre les hommes par la physionomie (ed. L.J. Moreau de la Sarthe), 10 vols, Paris, 1806-07, e.g. I, v). In the English editions, the term 'fragments' is not used, and this makes many of Lavater's comments seem peculiar. At the time, the distinction was not lost

on at least one reviewer who wrote of the French edition: 'Those who think they have composed a complete and regular system of any science, divide it usually into books and chapters; but our author, however adventurous in point of genius, is modest enough to look upon the science of physiognomy as far from being completed... and therefore calls his chapters fragments.' (Monthly Review, LXVI, 1782, 481).

63. Essays on Physiognomy, 47.

64. Ibid., 206. This is the only reference to the Physiognomonica, indicating that Lavater wishes to ignore it as much as possible, unlike his predecessors who built their systems around or upon it.

65. Essays on Physiognomy, 28.

66. Ibid., 65.

67. Ibid., 32.

68. Ibid., 288.

69. Ibid.

70. Ibid., 47.

71. As Lavater makes abundantly plain in the Essays on Physiognomy, his aim was to inaugurate a new science (see also Lavater's Secret Journal of a Self-Observer, 2 vols, 1795, II, 324).

72. Essays on Physiognomy, 37.

73. Ibid., 38, 15.

74. Ibid., 73. For Lavater's remarks on Bacon's method, see L'art de connaitre, I, 224.

75. Essays on Physiognomy, 96; Secret Journal, II, 59.

76. Essays on Physiognomy, 164; L'art de connaitre, I, XCVI.

77. René Descartes, Les passions de l'âme (Amsterdam and Paris, 1649), Paris, 1966; Parsons, Human Physiognomy; Marin Cureau de la Chambre, Les caractères des passions, 5 vols, Paris, 1640-42; John Bulwer, Pathomyotomia; or a Dissection of the Significative Muscles of the Affections of the Minde, 1649; Charles Bell, Essays on the Anatomy of Expression in Painting, 1806; Charles Darwin, The Expression of the Emotions in Man and Animals, 1872.

78. Essays on Physiognomy, 62.

79. Ibid., 452.

80. Ibid., 57.

81. The Reflector, I, ii, 1810-11, 136. See also remarks in Monthly Review, LXXVIII, 1788, 545.

82. Essays on Physiognomy, 64.

83. Ibid., 399, 167.

84. See Ibid., 190, 187-195 for discussion of solar microscope and silhouettes. Beaumont Newhall considers the European interest in profiles in general to have been due to the 'physionotrace' (The History of Photography, New York, 1964, 11-12). On the history of the silhouette, which first became fashionable in aristocratic circles in the 1760s, see Peggy Hickman, Two Centuries of Silhouettes. Celebrities in Profile, 1971; and E.N. Jackson, Silhouette, 1938.

85. See Essays on Physiognomy, 140-41. Ysabeau judges this to be the very best exercise for the budding physiognomist (Lavater et Gall, 15-16, 24).

86. On drawing as the physiognomist's 'natural language', see L'art de connaitre, I, 332f. Clapton, 'Lavater, Gall', has many insightful comments on Lavater's relation to art and artists (e.g. 297, 429, 433, 415); and this is an issue dealt with in Tytler's Physiognomy. Two studies not mentioned in Tytler's extensive bibliography are Mary Christine Cowling, The Conception and Interpretation of Character in Victorian Modern Life Art, 2 vols, Leeds University PhD., 1982, substantial parts of which treat mid-century popular physiognomy and art; and Judith Wechsler, A Human Comedy: Physiognomy and Caricature in Nineteenth-century Paris, 1982 (well reviewed by Neil McWilliam, 'Making Faces', Art History, 7, 1, 1984, 115-19). Some interesting work has been done linking physiognomy and caricature (apart from Wechsler's study). These for the most part begin with an examination of Lichtenberg's 1783 parody of the physiognomical approach to shapes and forms, his 'Parody on Tails' (see for a brief treatment, Loewenberg, 'Significance of the Obvious', 676-77). See, E.H. Gombrich, 'On Physiognomic Perception' in Meditations on a Hobby Horse, 1963, 45, 55, esp. 45-47 and 'The Cartoonist's Armoury', ibid., 120-42; also E. Kris, 'The Psychology of Caricature' in Psychoanalytic Explorations in Art, New York, 1952, 189-203. Lastly, Aaaron Sheon, 'Caricature and the Physiognomy of the Insane', Gazette des beaux-arts, 88, 1976, 145-50 is useful as historical background.

87. See Essays on Physiognomy, 150-51.

88. Ibid., 374.

89. Ibid., 284.

90. Ibid., 46.

91. See ibid., 12, 270.

92. Ibid., 11.

93. Ibid., 288.

94. See ibid., 170-76.

95. Ibid., 251, 163. Hence the use of silhouettes, as well as of portraits and sculptures (on the last, see Ysabeau, Lavater et Gall, 119-24, 147-56).

96. For contemporary examples, see Gentleman's Magazine, LXIX, 1799, 948; Monthly Review, LXVI, 1782, 495; Clubbe, Physiognomy, v, 5; Parsons, Human Physiognomy, 41; European Magazine, XIX, 1791, 126; Cooper, 'Observations', 415.

97. The story is reproduced in Cicero, De fato, V, 10, and Tusculans, IV, xxxvii, 80; see Cooper, 'Observations', 414-15.

98. See Essays on Physiognomy, 113-22, 295; also Heier, 'Lavater's System', 272 which offers this reading.

99. Essays on Physiognomy, 370-71. See also L'art de connaitre, I, 203, IV, 128.

100. Essays on Physiognomy, 149; see Monthly Review, LXXVIII, 1788, 550 on the physiognomy of the dead. Tytler dates the interest in the physiognomy of the dead and the beautification of the dead from the time of the Physiognomische Fragmente; this became particularly pronounced in novelistic accounts

(Physiognomy, 254-59).

101. Gwither, 'Discourse', 119.

102. Isaac Disraeli, Curiosities of Literature, 3 vols, 1866, I, 148-50; see also 206-08.

103. See Philip Collins, 'When Morals Lay in Bumps', The Listener, 90, 2316, 11 August 1973, 215. It should be noted that there is no record in the official archives of Madame Tussaud's itself ever having used this designation; nor did Mme. Tussaud or P.G.M. Curtius meet Lavater (for this information, see Anita Leslie and Pauline Chapman, Madame Tussaud. Waxworker Extraordinary, 1978; I must also thank the archivist at Madame Tussaud's, London, for providing this information and for checking through the company records for me- Ms. Undine Concannon).

104. Weber's notion of the ideal type is developed in his programmatic essay '"Objectivity" in Social Science and Social Policy', in Max Weber, On the Methodology of the Social Sciences, Glencoe, 1949, 89f.

105. The accusation of racism has been made by George L. Mosse, Towards the Final Solution: a History of European Racism, 1978, chapter I. In the heyday of physiognomy, its anti-classificatory bias was widely recognised; see, for example, William Hazlitt, 'On Personal Character', Selected Essays, 55.

106. Some of the ideas in the pages which follow were developed in the course of a dayschool at the Wellcome Institute for the History of Medicine, London, during which I read a pre-circulated paper on 'Lavater and the New Art of Seeing'. The dayschool was convened to discuss visual materials in the history of medicine; a paper by Christopher Lawrence

on 'The Road from Paris Pier: or what the Pathologist Saw' was especially useful. The workshop took place on 20 June, 1984. Dr Lawrence also reminded me about the discussion on medical illustration in Ludwik Fleck, Genesis and the Development of a Scientific Fact, Chicago, 1979, Section Five, esp. 136-37, 141-42; and suggested in his paper the importance of William M. Ivins, Jr., Prints and Visual Communication, 1953, and Joel Snyder, 'Picturing Vision', Critical Inquiry, 6, 3, 1980, 499-526.

107. My debt here is to the work of Roland Barthes, particularly the three first essays in Roland Barthes, Image-Music-Text (trans. and ed., Stephen Heath), 1977.

108. Darwin, for one, was frequently unable to 'see' the expressions and signs which were described by the photographers who sent him materials for his Expression. In an unpublished study of Darwin and depictions of the insane, Janet Browne has written that to Darwin, 'One photograph was very much like another' ('Darwin and the Face of Madness'). Darwin's work, it should be said, was explicitly not concerned with physiognomy (see Expression, 1).

109. See Roland Barthes, 'L'effet du réel', Communications, XI, 1968.

110. See Essays on Physiognomy, 50. Lavater claimed that he overcame this handicap with practice (see ibid., 140, 284, 411). Goethe who had a long acquaintance with Lavater (they met for the first time in 1774) recorded that the physiognomist had 'a wonderful capacity of discriminating persons and minds.' (Auto-biography, 12). Goethe did occasionally attempt to paint Lavater as having his eyes trained only towards God, but as the quotation

and its context from his autobiography show, this was far from the truth. Partly, I suspect, Goethe did this to claim some of the credit for the Physiognomische Fragmente. Thus he writes: 'His tendency was wholly towards the moral-the religious'. In his conversations, one can see that Goethe sought to snatch the whole glory for Lavater's work for himself: 'I asked whether Lavater had a tendency to observe nature, as we might infer from the "Physiognomy". "Not in the least", said Goethe. "His tendency was wholly towards the moral... That part of the "Physiognomy" which relates to the skulls of animals he got from me"' (Goethe, Conversations of Goethe with Eckermann and Soret, 1875, 368-69).

111. See note 86 above.

112. The subject of medical physiognomy and the physiognomy of the insane is one I have unfortunately not the space to discuss, though it is a highly important and neglected one in medical history. Some useful studies are: Sander L. Gilman, The Face of Madness: Hugh W. Diamond and the Origin of Psychiatric Photography, New York, 1976; idem, Seeing the Insane, New York, 1982; idem, 'What Looks Crazy. Towards an Iconography of Insanity in Art and Medicine in the Nineteenth Century', in Gerald Chapple and Hans H. Schulte eds., The Turn of the Century. German Literature and Art, 1890-1915, Bonn, 1981, 53-86 (text). All three texts are well-referenced.

113. See Tytler, Physiognomy, 81.

114. Essays on Physiognomy, 81, 82.

115. Goethe, quoted Tytler, Physiognomy, 61-62.

116. F.R. de Chateaubriand, Essai sur les révolutions, (ed. Maurice Regard), Paris, 1978, 95 (I, xviii).

117. See Heisch, Memoirs, 95; L'art de connaitre, I, XCVI.

118. When Holcroft's translation first appeared in three volumes, Lavater inserted a passage at the end of vol. I, 'May this endeavour generate happiness and truth', which was not included in later one-volume editions (Essays on Physiognomy; for the Promotion of the Knowledge and Love of Mankind, 3 vols, 1789-93, I, 241).

119. Goethe, Auto-biography, 9.

120. Many of Lavater's aphorisms appeared in general periodicals, and these seldom had any bearing on his physiognomy (e.g. 'my eyes have been powerfully attracted by the first productions of the human art', is perhaps the nearest to physiognomy; in Saturday Magazine, VII, 1835, 227). For other examples, see Critical Review, LXVI, 1788, 141; Edinburgh Magazine and Literary Journal, VIII, 1788, 34; English Review, XV, 1790, 1; Pocket Magazine of Classics and Polite Literature, II, 1818, 49; Repository of Arts, Literature, Fashions, XI, 1821, 148; Westminster Review, CXVII, 1857, 176; Universal Magazine of Knowledge and Pleasure, LXXXII, 1788, 301, LXXXIII, 1788, 80; Lady's Monthly Museum, X, 1803, 228; Household Words, XIII, 1856, 61 (aphorism from the Essays on Physiognomy); Christian Observer, XI, 1812, 770; Analytical Review, I, 1788, 286.

121. See Essays on Physiognomy, 7. See Monthly Review which remarks on the passages drawn from the scriptures which it says are unnecessary and unseemingly:

'we only express our wonder that they found a place in his book' (LXXVIII, 1788, 547).

122. See Essays on Physiognomy, 9. A example of the difference between a French edition and that of Holcroft (an atheist) is that the French has far more religious passages. We are told there that Lavater undertook the study of physiognomy with a religious aim in mind (L'art de connaitre, V, 92); that in physiognomy he found 'the guarantee of the eternal bountifulness of God towards men' (ibid., I, 216). The French editors nonetheless remark that the religious views expressed are the author's personal opinions, and do not arise from his physiognomy (ibid., I, 29).

123. Essays on Physiognomy, 398 (as printed).

124. English Review, VII, 1786, 388.

125. Quoted in Graham, Development of the Use, 108.

126. See L'art de connaitre, I, XCVII-III.

127. Salvador Dali, The Secret Life of Salvador Dali, 1948, 24. See Ronald W. Clark, Freud: the Man and his Cause, 1980, 516.

128. King Lear, IV, 6, Works, V, 446.

129. Balzac purchased a copy of the 'superb Lavater' in 1822 (see Balzac to Surville, 20 Auguste 1822, Correspondance de Honoré de Balzac, Paris, 1960-, I, 204; O. Bonard, La peinture dans la création Balzacienne, Geneva, 1969, 40); before he had done so there had appeared at least eight other versions of Lavater's text, and there appeared at least eight others in France during the 1800s (see Graham, 'Lavater's Physiognomy'). The Lavaterian 'interro-

gation of the eye'- a lovely phrase- was still being widely practiced in the 1850s according to contemporary witness (see H. Scoutetten, Eléments de philosophie phrénologique, Metz, c. 1862, 21-22), so it is no surprise to find Balzac deploying physiognomy in his own works. On this aspect of the Comédie humaine, see G.M. Fess, The Correspondence of Physical and Material Factors with Character in Balzac (Publications of the University of Pennsylvania Series in Romanic Languages and Literature, 10, Philadelphia, 1924); Fernand Baldensperger, Orientations étrangères chez Honoré de Balzac (Paris, 1927, 81-97); F. Thiele, Balzac als Physiognomiker (Berlin, 1927); P. Abraham, Créatures chez Balzac (Paris, 1931). A long study by the author of this thesis concerning Lavater, Balzac and the French literary critic Roland Barthes has recently been submitted for publication in Ideas and Production.

130. For examples of animal analogies being deployed to sustain racist Victorian ideologies, see Lewis P. Curtis, Apes and Angels: the Irishman in Victorian Caricature, Newton Abbot, 1971. Louis Chevalier's Labouring Classes and Dangerous Classes in Paris during the First Half of the Nineteenth Century (1973, 408f) examines physiognomy as practiced to note class origins and racial types in an urban environment.

131. On the growing fears respecting masturbation at and from the turn of the century, see Robert H. MacDonald, 'The Frightful Consequences of Onanism: Notes on the History of a Delusion' (Journal of the History of Ideas, 28, 3, 1967, 423-31); E.H. Hare, 'Masturbatory Insanity: the History of an Idea' (Journal of Mental Science, 108, 452, 1962, 1-25); Michael Shortland, 'Secret Sins and Unnatural Follies' (Literary Review, July 82, 31-32). There is a tendency

amongst some commentators to suggest that the Victorian or early nineteenth-century answer to the 'problem' of masturbation was naked, mechanical repression. In a long section of his The Anxiety Makers (1968, chapter three), Alex Comfort claims the typical and widespread response was either surgery or mechanical restraint. In other words, onanists were not looked at or carefully examined before, during and after the act, they were physically prevented from sinning. This tends to go against the position I am outlining. But in fact there were hardly more than a dozen cliterodectomies performed in Britain (and most of these were for 'nymphomania'); a long search through the files of the Patent Records Office reveals that three anti-masturbation devices were patented during the 1800s; to which we should add Dr Yellowlees's remedy of sewing up the sexual organs (see Journal of Mental Science, XXII, 1876, 336). This hardly supports the 'repressive model' of masturbation ideologies.

132. Allnatt quoted in Vieda Skultans, English Madness: Ideas on Insanity, 1580-1890, 1979, 73.

133. See P. Mantegazza, Physiognomy and Expression, c. 1880, 269-70; P. Giovanni, Saggio di Fisiognomonia e Patognomonia, Milan, 1837, 331, 368.

134. See 'Lavater, Sue & Co.', Lavater's Looking-Glass; or, Essays on the Face of Animated Nature, from Man to Plants, 1800. The attempt to present a physiognomy occurs in chapter XV. For an attack on physiognomy based on its lack of bases, see anon., 'The Chronology of Physiognomy', Midland Medical and Surgical Reporter and Topographical and Statistical Journal, I, 1828-29, 173-83.

CHAPTER NINE: THE REACH OF THE BRAIN

I. Gall and Organology

Franz Joseph Gall was twenty years old when the final volume of the Physiognomische Fragmente appeared in Leipzig in 1778, but he later enjoyed reminiscing that a decade before its publication he had himself detected a number of physiognomical correlations. At school, so the story went, Gall had noted that many fellow pupils with particular intellectual talents seemed to bear evidence of their gifts on their bodies and faces; he was especially struck with the correlation he observed between students with sharp memories and grotesquely large, bulging eyes.[1] Connections such as this could not, he felt, be 'entirely accidental'[2] and during the less engrossing parts of the school curriculum he tried by what the phrenologist George Combe later called an 'almost imperceptible induction' to build up a catalogue of distinct mental attributes and their external appearances.[3] As he embarked on this search, he discovered that a sizeable number of powerful psychological traits were connected with developments in particular regions of the skull. Devout church attenders seemed to manifest cranial landscapes different to those of murderers, and these in turn had heads markedly distinguishable from those of thieves. Such connections might, Gall thought, be the result of parallel developments in mind and in head form, but he never believed such changes

were the product of external conditions or of education.[4] Conditions at school and in his home town were approximately similar in their effect, yet the overall result was deep and widespread diversity. Though he was unclear about the purport of his casual investigations, by the time he turned to medical studies Gall felt sure that the brain was the cause of various individual mental differences and that these differences were innate.

During the 1780s, Gall read voraciously amongst classical and contemporary texts in the physiology and anatomy of the brain and in mental philosophy. The result was not enlightening; the works he consulted 'failed to establish a solid principle, a single immutable sign' which might suggest the extent and the character of the relations between inner and outer man.[5] Gall therefore set in motion a large scale project whose aim was to set physiognomy upon a rational, scientific, physiological basis. The first written notice of his plans appeared in a German provincial journal, Neuer deutsche Merkur in December 1798, and was later twice reprinted to establish his claim as the sole progenitor of phrenology.[6] The report took the form of a 'Letter from Dr F.J. Gall, to Joseph Fr. De Retzer, upon the Functions of the Brain, in Man and Animals', and a succinct indication of the aim and extent of Gall's intentions was provided in the opening passage:

> 'My purpose is to ascertain the functions of the brain in general, and those of its different parts in particular; to show that it is possible to ascertain different dispositions and inclinations by the elevations and depressions

> upon the head; and to present in a clear light the most important consequences which result therefrom to medicine, morality, education, and legislation - in a word, to the science of human nature.'[7]

Gall then sets down the basic elements of his subsequent work by affirming his belief in the innateness of the mental faculties in man and in animals, his contention that these faculties have their seat in the brain, and then declares his intention to carry out investigations primarily by direct observation, but also by means of plaster casts and skulls.

The basis for this programme of researches had already been laid down in lectures Gall gave in Vienna after he received his MD in 1785; accounts of these lectures were widely circulated through the Protestant states of Germany in the late 'eighties. Gall's reputation quickly spread and this enhanced his standing as a medical practitioner as well as drawing the attention of officials in the church hierarchy.[8] After some considerable pressure, Gall's public teaching was successfully proscribed by Emperor Francis I in 1802.[9] Gall was later to experience a great deal of trouble at the hands of the Viennese censors;[10] with a premonition of forthcoming difficulties he decided to undertake his researches in a more congenial environment. J.G. Spurzheim, then a medical student, attended Gall's lectures and then joined him as a research assistant in 1800, the year in which Gall embarked seriously upon his anatomical studies of the brain.[11] Spurzheim was elevated to the rank of collaborator four years later,[12]

and the first fruit of this partnership was a memoir submitted to the *Institut de France* in 1808.[13]

Before settling in France, Gall and Spurzheim travelled through Germany and its neighbouring states, delivering lectures to enthusiastic audiences in many of the major cities, and giving public demonstrations of brain dissections. Goethe, whom Gall met in Weimar, was particularly struck with the demonstrations he witnessed and with their novelty compared with contemporary teachings.[14] Outlines of Gall's lectures were widely circulated in reviews, essays, and books in Germany, Italy, Britain, and France;[15] by the time the pair reached Paris in 1807, their work was already well-known. The French capital provided a much more receptive environment than Vienna and there Gall was often portrayed in the same role of Lavater, offering consultations to the rich and powerful (see plate 14). Although the precise relations of psychic phenomena to the central nervous system had not yet been set out, a number of its scientific patriarchs had assigned the passions to organic life and had recognised the origins of internal sensations in the inner organs.[16] As Temkin observed, 'The animal in man, the brain as the organ of the soul, moral institutions as 'conditioning' man for correct behaviour were concepts which would hardly frighten the leaders of French scientific thought.'[17]

This view is readily borne out by Gall and Spurzheim's initial reception by the scientific community which quickly

learnt of their work; Cuvier, Flourens, and Geoffroy St. Hilaire were rapidly converted to the major tenets of the organological system.[18] However, when Napoleon returned from his campaign in Germany, he exerted strong pressure on the *Institut* to make a complete assessment of the doctrine. While in Germany, Napoleon had become acquainted with Gall's views and had been advised that the operations of the soul were too mysterious to leave any external mark.[19] This Gall knew and in his 1808 memoir he took up the challenge: 'And, the metaphysician can no longer say, in order to preserve his right of losing himself in a sea of speculation, that the operations of the mind are too carefully concealed to admit of any possibility of discovering their material conditions or organs.'[20] However, it is clear from contemporary accounts that Napoleon till his dying day remained steadfast in his belief that 'Nature does not reveal herself by external forms. She hides and does not expose her secrets.'[21] Moreover, he reprimanded the *Institut* when he heard that Gall's observations had been submitted for consideration, with the reminder that Frenchmen did not need to learn their anatomy from a German any more than be taught their chemistry by an Englishman (Humphry Davy).[22]

Though Cuvier was favourably disposed towards Gall's views, the report he presented as secretary of the Class of Mathematical and Physical Sciences in the *Institut* in one crucial respect followed the strictures set down by Napoleon himself. To begin with the report declined to

concern itself with the physiological aspects of Gall's doctrine, maintaining that such issues did not fall within the sphere of the *Institut*.[23] Gall and Spurzheim were then credited with a number of anatomical innovations and procedures for dissection, although many of their 'discoveries' were stated to be reiterations of views already proposed by (French) scientists (particularly Vicq-d'Azyr). Towards the end of the report, Cuvier and his fellow authors mention that they will not comment upon Gall and Spurzheim's denial that there exists a place to which all sensations are directed, for this they say would entail a discussion of the notion of the simplicity of the soul. The nature of the soul, they continue, and its connection to the body, are 'necessarily incomprehensible to our minds'; this being so, 'the more or less limited sphere which it is wished to give to the sensorium would not, in the smallest degree, assist our conception of it.'[24] With this conclusion, Cuvier effectively reproduces Napoleon's view of the soul, retreats from his own, and appears to preclude the possibility of a physiology of the brain. The consequence of Napoleon's intervention was later described by F.J.V. Broussais in a series of lectures on phrenology:

> 'Gall encountered an obstacle which he could never have forseen... As soon as the Emperor's opinion was declared, the persons who had received the doctrine of Gall with favour, changed their tone, and either became his open enemies, or sought excuses for their desertion of a cause which they had so recently adopted. But this was not all. Ridicule was employed, the journalists were let loose, and for several years GALL and his opinions were attacked in the most virulent and embittered manner.'[25]

To be accurate, we should remember that phrenology remained

powerful amongst many French scientists despite the popular attacks upon it - in large measure, the hold Gall's doctrine maintained can in fact be credited to the figure of Broussais himself. In 1831, the Phrenological Society of Paris was founded and it remained active for approximately 15 years. Throughout this time, it retained a significant contingent of French physicians and important medical school professors. Casimir Broussais was its first general secretary, and Bouillaud its journal editor; Andral and Bérard, also from the *Faculté de Médecine*, and Amussat and Abraham from the *Academie de Médecine* were also on the membership rolls, as were eminent private practitioners and hospital chiefs.[26] Broussais became a convert after 1828 and taught phrenology as part of his medical school course.[27] One might even conjecture that if Gall did influence leading medical and scientific figures in the early decades of the nineteenth century, this must have been a powerful conveyor belt for his ideas throughout Europe and America - for this was the period when French medicine was most dominant.[28]

This influence was most strongly felt as a result of the new, revised edition Gall issued of the work he published beginning in 1810 with Spurzheim, Anatomie et physiologie du systême nerveux en général, et du cerveau en particulier, avec des observations sur la possibilité de reconnoitre plusieurs dispositions intellectuelles et morales de l'homme et des animaux, par la configuration de leurs têtes. Spurzheim was credited as joint-author of the first

two volumes, but left Paris in 1813 to spread the doctrine in Vienna and then London; he soon began issuing volumes of his own which contained substantial variations of his earlier positions. Gall remained in Paris and began lecturing to medical students in 1819, the year which saw the final volume of the Anatomie et physiologie appear in print. Gall made his first bid for public recognition with his decision to revise the work to include recent developments and to respond to criticism; thus his major work was issued from 1822 to 1825.[29] Three years after, Broussais announced that 'one of the brightest scientific torches has just ceased to enlighten'.[30] Gall had died on 22 August 1828, aged 70, leaving behind a final point to perplex both his supporters and his opponents: at *post mortem* he was found to be large-brained, but also thick-headed.[31]

A major treatise of some 1800 pages, offering a revision of another only marginally shorter, built of speculation, detailed criticism, polemic, facts, figures, and covering the fields of physiology, anatomy, morality, philosophy, education, and much else - not to speak of one which claims to inaugurate the discipline of what is variously termed 'organology' and 'craniology' - such a vast corpus of work does not lend itself to easy summary. Nonetheless, it can best be thought as being based upon four fundamental suppositions:

1. That the moral and intellectual faculties are innate;
2. That their exercise or manifestation depends on

organization;

3. That the brain is the organ of all the propensities, sentiments, and faculties;

4. That the brain is composed of as many particular organs as there are propensities, sentiments, and faculties which differ essentially from each other.[32]

'Phrenology', as Gall's doctrine later came to be known, is an extension of these four propositions in two directions. Firstly, it is based on the belief that the size of any particular organ in the brain, along with its activity, gives a measure of the power of the faculty sited in that organ. Secondly, it is asserted that the cranium gives a faithful indication of the development of particular organs, and therefore of the strength of the faculties.

As we shall see, Gall appears to be much more concerned with the nature of particular functions than with their localization, more interested in the details of craniology as a physiological and philosophical doctrine than in its foundations in the anatomy of the brain. Having set out his suppositions, Gall proceeds to isolate twenty-seven essentially different moral and intellectual faculties, which he terms 'fundamental powers', associating with varying degrees of exactness a distinct organ of the brain with each. These powers are initially vague in character and in number,[33] but in his fullest statement the list of organic instincts, mechanical aptitudes, acquired skills, and native talents (all of which are deemed to be innate)

is as follows:

1. Instinct or Propensity for Propagation;
2. The Love of Offspring, or Philogenesis;
3. Attachment or Friendship;
4. Instinct of Self-Defence;
5. Carnivorous Instinct;
6. Cunning;
7. Sense of Property, Propensity to Steal;
8. Pride, Love of Authority;
9. Vanity, Ambition;
10. Circumspection, Foresight;
11. Memory, Educatability;
12. Sense of Locality;
13. Faculty of Distinguishing and Remembering Persons;
14. Memory for Languages;
15. Talent for Philology;
16. Talent for Painting;
17. Talent for Music;
18. Faculty for Relations of Numbers;
19. Faculty of Constructiveness;
20. Comparative Sagacity;
21. Metaphysical Depth of Thought;
22. Wit;
23. Talent for Poetry;
24. Goodness, Greatness, Compassion, Moral Sense, Benevolence, Conscience;
25. Faculty of Imitation;
26. Religious Sentiment;
27. Firmness, Constancy, Perseverance, Obstinency.[34]

It is noteworthy that in this, the most important part of Gall's work, there remains a fundamental ambiguity about both the nature and the number of the faculties. Gall mentions the great difficulty in reaching an accurate assessment of the number of faculties present in man and suggests that this might vary from twenty-seven to thirty[35] -

a clear anticipation of criticism which would be levelled against him for imprecision,[36] as well as an indication of the general looseness of his system. Later phrenologists felt no impunity in adding to, or subtracting from, Gall's list.[37] In so doing, they took for granted Gall's view that the number of faculties was of less importance than the fact that organology was directed squarely against the notion of a unitary soul,[38] and against the predominant eighteenth-century uniformitarianism of mind and man. Though it was later said that Gall derived his analysis of the mind from the Scottish faculty psychologists,[39] and others pointed out the parallels between the two doctrines,[40] the work of Reid and Stewart was little known in France in the early part of the century.[41] Gall, in fact, does not refer to any of their work (one reference to Hartley appears but not in relation to his work in Observations on Man), and implies instead that the Scottish school derived their conceptions not from experience but by a process of deduction. Referring to the notion of faculty held by his predecessors, Gall writes that 'everyone gave free rein to his imagination...Instead of being radical, fundamental, primitive faculties, they are only abstractions, generalities, general attributes of the fundamental powers'.[42] Everyone, he says, even those who concluded that attributes were to be found in the brain, 'wandered in the clouds of speculation'[43] and 'over the fields of sophism'.[44] They asked the wrong questions, confused the important with the trivial, and the central with the peripheral;[45] their faculties were merely attri-

butes common to all properties and talents, such as 'intellect' and 'intelligence'.[46]

Instead of beginning with metaphysical speculation, which Gall denounces continuously and with great vigour throughout his work,[47] Gall maintains that he began his researches into faculties without knowing what to expect: 'I had as little prepared myself to find a single fundamental power as to find twenty'.[48] Any confusion which might therefore arise from his classification appears simply as a reflection of the real links this list of faculties has in complex experience; as facts gradually accumulated, so did the number of faculties.[49] Similar reasons account for the confusion between 'quality', 'faculty', and 'disposition' in his work, and the equivocal use of the 'soul' and the 'mind'.[50]

Gall's initial reputation lay in his anatomical work, in the main exhibited to large audiences at public demonstrations.[51] Unlike many of his contemporaries,[52] Gall dissected the brain from below upwards, tracing the fibres from the spinal cord to the cortex and by this means managed to preserve various connections which were destroyed by other procedures.[53] For many, it was this new approach to dissection which guaranteed his lasting importance.[54] With this procedure Gall claimed to have shown that the white matter consisted of nerve fibres, and to have followed the course of these fibres and their relations with the various grey masses which, he believed, was their

source and final destination.[55] Most crucially perhaps for his systematic physiology and 'organology', the anatomy of the brain failed to show any convergence of fibres to a single point; this seemed strong evidence against the notion of a unitary soul seated in the brain,[56] and Gall and Spurzheim ended their 1808 memoir by arguing that there did not exist, nor could there exist, a common centre of all wills, sensations and thoughts. Anatomy, in fact, seems at most to have fulfilled the function of providing negative evidence for what he deemed to be metaphysical speculation, though on occasion Gall deployed notions of structure to reinforce his physiology. In an article on the brain, Gall wrote that 'establishing the plurality of organs and determining the fundamental faculties are the *only ways* to establish the relation between the organ and the manifestation of its respective quality';[57] yet, in the same piece, he also recognized the slow progress of anatomy and stressed that it would need to be continually supported by, and guided by physiology.[58] Gall, indeed, never proved the existence of morphologically distinct areas which his doctrine required, though 'he presented a picture of the brain that did not contradict his physiological assumptions'.[59]

It is certainly easy if one reads the Anatomie et physiologie alone to form the impression that for Gall and Spurzheim anatomy can, and does, reveal separate organs and must serve as the real and the methodological basis for organology. The very fact that the first volume provides

a detailed and careful description of nerves, the spinal cord, the cerebellum, and the structure of the sense organs gives credence to that particular reading. Ackerknecht, for example, has written that although Gall termed his doctrine a 'physiology', it is actually and in major respects an 'anatomy'.[60] Certainly, Gall's use of comparative anatomy is impressive, not least for the tantalizing suggestion of an evolutionist perspective offered by Gall's talk of 'progress through superposed cerebral productions', and of 'gradual perfection in the scale of sensitive beings'.[61] But there is no reason why we should assume that Gall himself had foreknowledge of what in his work would last and what would perish; certainly 'Time, the severest of critics, has left part of his work nearly intact', as Ackerknecht elsewhere remarks.[62] But this part of Gall's researches was the one he actually expressed least confidence in himself.

Cuvier's report on Gall and Spurzheim's 1808 Memoir had concluded that the cerebral anatomy presented to the *Institut* bore no immediate or necessary relationship to its cerebral physiology.[63] In his reply, Gall appeared to accept the criticism in part, for he noted that anatomy needed merely to ensure that it was not *incompatible* with physiology.[64] Though we might interpret this as a retreat from the major thrust of his Memoir, the position here follows a pattern Gall had already set in his first published work which appeared in 1791, that is, a full nine years before Gall began his anatomical researches.[65]

Moreover, in the Memoir itself, the authors presented some work which it was said, 'the scalpel alone would never have been able to uncover'.[66] Two years after, Gall to all extents and purposes ceased to engage in any further research; the shift from the Anatomie et physiologie to the Fonctions du cerveau represents, as we have noted, a response to criticism, and in addition a re-organization of material. The result is that by the early 1820s (when the first volumes of the Fonctions go to press) Gall is offering physiological research 'founded independently of anatomy'.[67] 'Nothing', he writes, 'in the physiology of the brain has been constructed on any anatomical data whatsoever; nothing has been interpreted by the structure or the arrangement of the cerebral parts.'[68] Structure, in other words, cannot in any substantial or important way determine function,[69] in the brain any more than in other organic formations in the body.[70]

In 1824, Pierre Flourens published the results of a series of brain operations he had undertaken on a large variety of animals, including cats, dogs, birds, lizards, and quail. The purported aim of the Recherches expérimentales sur les propriétés et les fonctions du système nerveux dans les animaux vertébrés was to locate the faculties of the mind by discovering their seat in the organs of the brain.[71] Nonetheless, the changes in behaviour he observed after removing parts of the forebrain did not appear to depend to any great extent on the precise part removed, suggesting that the different psychological

functions were not separately localized. Further experiments set out to test Gall's hypotheses by ablating areas in the cerebellum, the organ which Gall had designated as the seat of the instinct of propagation. Removing the cerebellum gradually by deeper and deeper surgical slices, Flourens found that his subject, a dog, retained all its intellectual faculties and senses and was deprived only of the faculty of co-ordinating and regularizing his movements.[72] 'Feeling, willing, and perceiving', he concluded, 'are but one single and essentially unitary function residing in a single organ'.[73] This was a challenge to organology which Gall could not possibly ignore; Flourens was a special protégé of Cuvier, universally regarded as one of the finest experimental anatomists of his generation.[74] Gall's response, which he had time to include in the final volume of his major work in 1825, provides a highly enlightening indication of the respective weights he assigned to anatomy, experimentation, physiology, and organology, as well as offering telling testimony of the methodology he deemed acceptable.

Gall asserted again, but this time in a stronger tone, his belief in the irrelevance of anatomical attacks on his theory of the localisation of cerebral organs: 'The fate of the physiology of the brain is independent of the truth or falsity of my assertions relative to the laws of the organization of the nervous system, in general, and of the brain in particular, just as the knowledge of the functions of a sense is independent of the knowledge

of the structure of the apparatus.[75] To this general defense, Gall added a personal, and in some ways justified, criticism on Flourens's experimental procedure. Flourens had described his experiment on the dog as involving 'a series of deeper and deeper slices' into the cerebellum, and this, Gall pointed out, resulted in different 'organs' being butchered where only one was intended. 'He mutilates all the organs at once, weakens them all, extirpates them all at the same time... consequently all his experiments, even should he give us millions, never can have the least demonstrative value'.[76] This specific assault on Flourens's anatomical procedure is then coupled with a more general repudiation of all experiments on the brain. For one thing, 'it is impossible to perform exactly the same operation, or experiment, a second time', and adds that, 'not only each different experimenter, but the same man, in each new experiment, must necessarily obtain different results'.[77]

Having thus to all extents and purposes disposed of Flourens's experimental results, Gall makes two crucial concessions. It is clear that Gall was shocked and wounded by the evidence offered by this new research, especially as it was taken as a definitive *coup de grace* by many already hostile critics in the French scientific establishment. His retreat in two respects can nonetheless be seen to have been legitimated by the vagueness of previous pronouncements he had issued on each subject.

Firstly, having established to his own satisfaction the localization of cerebral organs and the plurality of faculties, Gall claims that neither position need entail denying the *unity* of faculties and organs *in action*.[78] This unity is in effect destroyed by the very experiments designed to establish it, for dissection of the brain prevents the vital 'reciprocal influence of the different parts'.[79] The same can be said for anatomical researches designed to establish the homogeneity of the brain.[80]

Next, Gall rebuffs Flourens's possibly more damaging blow to organology which took the form of observations that with the passage of time, animals sometimes recovered all or part of their lost functions after ablation. Gall had maintained that several organs covered the entire cortex and determined characteristic behaviour by their relative sizes and energies. According to this view, surgical removal ought to have altered the relative size permanently, and there should not have been a return to the original condition. Faced with strong evidence against his opinions, Gall then asserted that experiments on animals could not possibly have any bearing on the moral and intellectual faculties of man: 'it is absurd to think of applying the vague, arbitrary, varying and perhaps, poorly observed results of experiments on hens, pigeons, and rabbits, to the moral and intellectual faculties of man'.[81]

The result of Gall's critique of Flourens is a rejection of anatomical approaches to the study of the brain unless

these provide corroborative evidence; a denial that the experimental method can provide valid and repeatable data; an apparent softening of the theory of the independence of faculties and cerebral organs; and a suggestion that there might be fundamental differences between man and the animal kingdom. Two roughly contemporary comments on Gall's defensive position are enlightening. Firstly, in an article on the faculty of language published in 1865, J.B.M. Parchappe remarked on the abandonment by Gall of anatomy in his system, just as he had abandoned it from the title of his major work in the interregnum between the last volume of the Anatomie et physiologie and the first volume of the Fonctions du cerveau. If Gall is to be thought the true father of phrenology, then its conception took place in this period, from 1819 to 1822.

Parchappe writes:

> 'It is noteworthy that Gall, although he set out to perfect the anatomy of the nervous system as this had been set out by important scientists, failed to bring that anatomy to bear upon those issues that needed to be supported in his own system. He failed to demonstrate that the periphery of the cerebral hemispheres can effectively be deconstructed into distinct organs corresponding anatomically to the physiological functions whose existence he admitted.'[82]

Next, a general and biting comment from the Edinburgh Medical and Surgical Journal in 1824, from the journal that had done so much to first introduce Gall's work to the British medical profession.

> 'In the present state of matters, it appears to us no small proof of the validity of Flourens' doctrines, that so acute and so

> captious a controversialist, on a point so injurious to his system, has made so weak an assault, and has been reduced to such sorry subterfuges.'[83]

The nature of those 'subterfuges', we shall now examine with a more general focus; they have, we shall see, a crucial bearing on the death of phrenology in France and Germany, and its rapid spread in England and America. Seldom has such a powerful critique had such contradictory and unforeseen consequences.

* * * *

It is impossible to read Gall's work without being made aware that in some form or another the unity of nature and creation is a strong undercurrent. The notion of a chain of being seems to guarantee his idea that man is subject to purely natural laws. This notion has been traced by one commentator, on the basis of a careful study of language and metaphor, to the influence exerted on Gall by Herder.[84] Another equally lucid study finds the source in Bonnet.[85] The many horticultural analogies used by Gall (he was an enthusiastic gardener in his youth), in particular the one he develops from plant-nerve similarities, are occasionally extended to suggest that man is, like a plant, bedded into nature's soil; another mode of discourse taken, it seems, from Herder.[86]

It is difficult to disentangle in Gall's work the metaphorical flourish, the methodological gloss, and the true and effective conceptual reliances; the more so as

this work itself alters in character and presentation through Gall's career. Nonetheless, it does seem clear that from the inanimate, through living plants, through the sensitive animal to the thinking man, one single law rules: the law of the unity of nature.[87] Beyond this, it is difficult to judge whether this notion further included a view of nature as dynamic and vitalist (as the links with Herder would suggest),[88] or as we might expect if Bonnet was a cardinal influence, nature was conceived in more rigid, mechanical terms.[89]

Whatever authority it is claimed Gall relied upon, the clues detected to enforce the influence are inevitably found in Gall's early work, in the youthful Gall. The chain of being, likewise, is to be found most vigorously used in the Anatomie et physiologie and in the earlier volumes of the Fonctions du cerveau.[90] But perhaps 'use' is too strong a term, for even in the earlier work one can find the notion of higher beings including lower forms, or what amounts to the same, animals being but fragments of man, alongside the idea that animals possess organs lacking in man and man, likewise being endowed with exclusively human organs.[91] Similarly, whilst one can locate references to a static version of the chain of being, Gall seems to hold the option of this assuming an evolutionary aspect. Man can be positioned in the 'gradual march of nature' from lower to higher forms,[92] nature being conceived as the unity of a structural plan. Or, man can be seen against the background of a pervasive

unity of function in which each being is destined 'to fill a void, to accomplish an end in the order of things'.[93]

The apparent confusion, common as Lovejoy has shown to many writers of the period,[94] serves a useful strategic function in Gall's system, allowing it to flex and distend as criticism comes from various quarters. As we have suggested, the ploy is used when Gall meets Flourens's experimental researches on animals; the tone of his reply being set to argue that there are irreconcilable distinctions between man and the animal kingdom. Gall now clearly states that animals lack human cerebral organs,[95] moreover, that man's anatomical makeup is fundamentally different from that of lower forms in the hierarchy of nature.[96] Deftly anticipating further criticism - which came in one of the most powerful attacks phrenology would later face[97] - Gall further asserts that the fundamental difference applies only to questions of structure, not of behaviour. Behavioural characteristics could be noted and chronicled on a universal basis in an idiom which applied to the whole of the animal kingdom. The privilege Gall assigns to man applies only to what he is *functionally*, not to *how* he must be studied. Or rather, we should say that a naturalistic method prohibits anatomical procedures since these are founded on the denial of man's functionally-based privelege.

It was lightheartedly suggested above that phrenology was conceived between 1819 and 1822. A hostile critic might

date its death more exactly to the year 1825. The birth occurs as a result of the abandonment of anatomy in the system, or more exactly, the rejection of anatomical experimental evidence which might conflict with the notion of cerebral localization. Death comes when the physiological, and hence psychological, basis for the independence of faculties is diluted almost to the point of disappearance. The Anatomie et physiologie embodies what Riese has termed an anatomical and psychological 'atomism',[98] though it is an atomism so loosely founded, supported by so many differing props, that even here one single term may give a false impression of systematicity. One procedure Gall employed to effect when this atomism was questioned was the retreat into silence: to assert that the question itself was ill-founded, ill-conceived, illegitimate. In volume five of the Fonctions du cerveau, that is in 1824, Gall was faced with just such a question from Etienne-Jean Georget who in his De la physiologie du système nerveux et spécialement du cerveau (1821) had asked how it happened that independent faculties so effectively concealed their independence, how the notion of a single consciousness of being, a single self, could form itself so strongly. This was no problem, or rather it was a non-problem. Gall responded:

> 'How happens it, that M. Georget, who has already so often rejected the insinuations of the metaphysicians, assumes all at once the air of wishing to place himself under their banners? How do all the organs of voluntary motion, how do the five senses communicate together, in such a manner, that several may be simultaneously in action? For my answer I refer M. Georget to the axiom: *no difficulty whatever can destroy a fact.*'[99]

'If you are still eager for explanations, I refer you to the tribunal of metaphysicians, who explain every thing, *without knowing any thing*.'[100] With this Gall ends his volume.

* * * *

But, as we have seen, the work of Flourens showed that these questions were far from 'idle', as Gall maintained;[101] more to the point, Flourens suggested that their answer would seem to lie in accepting that the brain and the mind were not as differentiated as Gall assumed. In addition to attacking Flourens's experimental procedure, his 'lacerations' and 'injuries',[102] Gall also claimed that Flourens failed to find the specific organs because these were placed very close together, *imperceptibly* close together. How beneficent of nature to arrange things in this manner, not only to confound those who would dare to assault her scalpel in hand, but also to ensure that, being so close, organs could often 'help each other out'.[103] The organ of the instinct for propagation was placed decently close to the organ of philogenesis; to slice through the cerebellum was to wield the knife in the service of immorality! If there existed an organ of time, this would without doubt be found in near proximity to the organ of the faculty for relations of numbers and the organ of the talent for music.[104]

This line of reasoning carried Gall to take up just those metaphysical speculations his physiology was intended to

rebut. Terms such as 'reason' and 'intellect' were now good coinage; they were the consequence of the close workings of organs in proximity to one another.[105] (And having gone a way to granting man organs not present in animals, Gall could further state that reason was a product of these organs alone working together, i.e. reason and intellect were purely human characteristics.) The happy co-ordination seldom occurs however, Gall states, to restrict the implications of his shift.

Etienne-Jean Georget had also criticised Gall on other grounds, not least of which was that he had plagiarized the work of Bonnet, Herder, Kant, and a host of others. This allowed Gall to assert as he had done throughout his work that his methodology made such criticisms futile. 'It may be said, that to me only the physiology of the brain owes its existence', he began (with a use of 'only' which now draws a smile), 'That I have discovered it without the aid of any one whatever, the history of each of my discoveries sufficiently proves... I commenced, continued, and almost completed my discoveries without any previous instruction; and, if afterward (sic) I compiled quotations from others, it was rather to manifest my point of departure from them, than to strengthen my ideas.'[106] Gall's final paragraph in his final book adopted a similar tone to make the same point:

> 'The physiology of the brain is entirely founded on observations, experiments, and researches for the thousandth time repeated, on man and brute animals. Here, reasoning has had nothing more to do with it, than to seize the results, and deduce

> the principles that flow from the facts... All is connected and harmonious; every thing is mutually illustrated and confirmed. The explanation of the most abstruse phenomena of the moral and intellectual life of man and brutes, is no longer the sport of baseless theories.'[107]

We now know to question the foundation of experiment Gall refers to; so too, we know that the harmony and coherence of Gall's system leaves a great deal to be desired. What though of the empirical base; the innocent, unplanned discoveries; the observations; and the facts? How important were Gall's methodological claims for his system, for its reception in France, and for its growth in England? These questions require attention, both for their historical importance and because a clear conception of Gall's method allows one to pinpoint his relations with physiognomy.

II. The Public Arena

Gall's claim to be the sole originator of the physiology of the brain stands in marked contrast to the lowly, unpretentious tone he adopts towards methodological issues, that is, to the question of how he came to be physiology's progenitor. A more conceited figure might have erased the memory of early schoolboy attempts at physiognomical correlation; Gall not only stressed the importance of these fumblings, he actually made a principle from them. Frankly, he admitted, he learnt nothing at school from his teachers; what he picked up was in the reach of anyone with a good

pair of eyes and time to spare. Time and sensory evidence, in fact, are the first ingredients in the organological recipe.[108] Restricting what can be *known* to what can be *seen* has the immediate result of cancelling a whole set of metaphysical issues and speculative systems. So Gall refuses to address himself to issues of the nature of the soul, the relations of mind and body, the true essence of man and so forth. Such subjects have been asked for centuries, have received no answer, and are an impediment to progress in physiology and psychology.[109] Even so, Gall not only offers a panoply of thoughts on the creation; he also assigns a distinct organ for religious sentiment.[110]

'All our positive knowledge', says Gall, 'in natural history, in natural philosophy, in chemistry, in medicine, has its source in experience or empiricism.'[111] A second consequence of this position is to open the study of physiology and phrenology to the population as a whole in a way very similar to that we saw apply in the case of physiognomy and the early years of the BAAS. Like Lavater, Gall also writes that books and reviews serve no function for work in the field of physiology;[112] moreover, studies in natural history, natural philosophy, and philosophy are neither indispensible, nor even useful.[113] 'It is requisite to have a good deal of patience, good observation, good eyes, and dexterity in the use of the hands'.[114] That, we might add, is all. There is, of course, the question of what to do with the facts, a

question of inductive practice, or reasoning, or logic. But this is another issue into which Gall will not be drawn. As logicians existed before the rules of logic were formulated and as man speaks without knowing the rules of language, so craniological skills can be acquired without scholarly wisdom.[115]

The image one has is of the organologist tearing *Natura's* veil immodestly aside to reveal her secrets to science, for the purposes of enlightenment.[116] But even this would be to impose membership restrictions on the band of physiologists. The facts of his system, Gall claims, are of '*such a nature, that they can be repeated and multiplied voluntarily by each of my readers. I have not desired to seek in another hemisphere that which could not be found at home.*'[117]

The society of organologists is a true republic of science: open to all (except the metaphysical), easily joined, a constant source of enlightenment. There may with so many facts being gathered occur an occasional empirical disproof, but as facts accumulate the chance of this arising diminishes (nature being governed by strict, immutable laws).[118] An initially careful attitude to findings can therefore be substituted for something less modest once nature has revealed herself.[119] Towards the end of his labours, Gall signs himself on the scroll of history. 'My researches', he concludes,

'bear not the impress of the age in which

> they originate, and will not wear out with it. They are the result of numberless observations; and will be immutable and eternal, like the facts that have been observed, and the fundamental powers which these facts force us to admit. They are not founded on principles deduced from individual facts, but are confirmed by each individual fact in particular, and will come off triumphantly, from every test to which they may be submitted, whether or analysis or synthesis.'[120]

In addition, once members of the band of craniologists, the common public will be able to discourse in common language with the minimum of technical vocabulary. The metaphysician knows not of what he speaks and so is naturally very careful how he says it. Gall's system uses a natural language: factual, clear, and above all, precise.[121] The obvious target here was Germany's greatest philosopher. In 1798 Gall had already declared himself incapable of arguing *a priori*, and refused to assume blame for not 'making use of the language of Kant'.[122] The language was, he felt, wilfully obfuscatory; more so even than the tortuous notions it expressed. 'As respects Kant', Gall said when a critic accused him of reproducing some ideas from the Kritik der reinen Vernunft, 'I have always heard him spoken of, in Germany, with enthusiasm. But, by a singular fatality, I have never had a sufficiently transcendent mind to comprehend any thing of his philosophy. The books whether of jurisprudence, medicine, or metaphysics, written in the style of Kant, Fichté (sic), Schelling, & c., have always disgusted me by their bombastic, unintelligible, corrupted style.'[123]

In addition to restricting the kinds of issues that organology can fittingly address, Gall's methodological prescriptions make possible a more thorough investigation of nature and its inhabitants. Having selected an object, decided upon observation as the only means to acquire knowledge of it, and having regimented oneself to the language of common sense, whole new worlds are opened up. By refusing to emulate the metaphysician Gall does not decline to tread on his patch of ground. The same goes for the physician. By ploughing over the same terrain time and again for centuries, the idle speculators have provided ideal soil for the seeds of empiricism to grow. However, before venturing into these fields, the common organologist needs to train his powers of observation to the scientific level. With a 'genius of observation' he can then sally forth into new areas to bear witness to 'the most secret events in families... and their intimate relations'. Who else, asks Gall rhetorically, 'can trace the extremely delicate line of demarcation which distinguishes immorality, wickedness, and crime, from certain derangements of the mind, so often masked?'[124] The notion of genius is of great interest to Gall, as is the morbid, the grotesque and the unique - it was amongst extreme cases of individuality that he sought his correlations of body and cranial peculiarities. Crucially, the genius is not gifted with more faculties than anyone else, merely with certain organs more active and better developed. This greater power left the genius of observation with the ability to penetrate deeper and deeper into

the textures of nature, to grasp reality more keenly, to 'seize with force the object which nature has pointed out to him'.[125] All geniuses are geniuses of observation, endowed as Lavater claimed he was, with the 'power of a thousand eyes'.[126]

The methodological claims made by Gall have attracted the attention of historians of positivism; there would seem little doubt that, if our summary is accurate, Gall can lay claim to adhering to some form of empiricism. Some commentators, however, have derived other ideas by refusing to sever Gall from the pervasive influence of Herder, the Romantics, or the theologians. Temkin has emphasized the religious aspects of Gall;[127] Lesky has referred to Gall's system as a version of 'preromantic vitalism';[128] Jason Hall finds it both positivist and Romantic, 'a positivistic Romanticism'.[129] What remains from these efforts to classify Gall as something other than an organologist or physiologist is the interesting and historically important question of his relation to positivism as a methodology, and to Positivism as a system.

* * * *

The 'illustrious Gall'[130] earned very high praise from Auguste Comte, founder of the Positivist Philosophy; with Broussais and Bichat (but unlike Saint-Simon and Cuvier) he was accorded the rare accolade of being placed amongst the 'best representatives of humanity' in the Calendrier

positiviste.[131] In the 45th lesson of Comte's Cours de philosophie positive (1837), Gall's theories were found to be healthy, strong, and eminently scientific: 'subjected for a third of a century to the most decisive tests this new doctrine has clearly manifested all the indications which can guarantee the indestructible utility of scientific conceptions'.[132] What has been 'settled irrevocably' by phrenology are the notions of the innateness of fundamental dispositions and the plurality of distinct, independent faculties.[133]

But, as we saw in the case of Gall's last volume of the Fonctions du cerveau, there already exists within the system the possibility of allowing for co-ordination of organs and faculties. This Comte recognizes,[134] yet maintains that phrenology must continue to carry out anatomical investigations to establish distinct organs in the brain; this task is the number one priority for scientists.[135] Secondly, having pointed out the need to secure experimental foundations for phrenology, Comte further asserts that the number of faculties proposed by Gall needs to be re-considered on the basis of physiology.[136] Phrenology has no place as a psychological doctrine in Comte's view (Comte had already rejected psychology as a possible science standing on its own in 1828),[137] but needs to collaborate with - even discipline itself under - the twin sciences of anatomy and physiology. Craniology as such earns no mention and certainly no praise from Comte.

By the time of the publication of the Système de politique positive (1851-4), Comte had already made Gall the subject of a new investigation and his conclusions were far harsher towards the phrenological cause. In between the two works, Emile Littré, an important addition to the positivist movement (though somewhat of a dissident), had reproduced Comte's criticisms in their essentials but had concluded that without anatomical proof or strong experimental evidence in its favour, phrenology was neither true nor false, simply a potentially interesting system. Any attempt to build a philosophy on Gall's work would be 'at best, a hypothesis erected upon a hypothesis'.[138] It is difficult to judge whether Littré's caution effected Comte's re-appraisal or whether he was losing faith in a body of work which was by then discredited amongst the French scientific community. Whatever the explanation, Comte's sociology had been constituted in 1838 (it was formally inaugurated in the 47th Lesson of the Cours) and the emphasis was re-directed towards the study of collective evolution; sociology was also deemed to be able to contribute to the establishment of moral order.[139]

Gall's work still received complimentary references, yet it could in Comte's view go no further than any other system based on 'purely individual evolution'.[140] Comte now doubted that anatomy or physiology could ever establish phrenology and asserted that the general functions of the intellectual and moral faculties were the legitimate subject matter for sociology. Biology could only

advance in studying these functions by subordinating itself to sociology. It appears to Comte that at best Gall is a useful stick with which to beat priests, physicians, and metaphysicians.[141] As a whole, Comte's critique is that Gall overplayed the importance of physical attributes,[142] misplaced some organs,[143] made a false distinction between feelings and propensities,[144] was overly analytic,[145] and generally neglected any notion of the role of man's practical interventions in the world.[146]

Of more direct import for our own discussion, it is interesting to note that Comte recognized the true function of anatomy in Gall's work; despite his own claims to the contrary, anatomy was in the Fonctions du cerveau merely a 'didactic artifice to quell immediate doubts in the minds of readers'.[147] That this was a manifest failure Comte takes to be evidence that anatomy must always be subordinated to physiology; to do otherwise will inevitably tend to overemphasize the *distinction* between organs rather than their mutual *interplay*.[148] A physiological approach has rather similar effects in disassociating man from his environment.[149] As well as making these points, Comte shrewdly notes that Gall's methodological proscriptions and prescriptions had the aim of making his system widely popular and attractive to groups outside the scientific community; Gall proposed the observation *of* crowds *by* crowds.[150] Lastly, Comte takes up Gall's last points concerning the distinctions between animals and man, but does so to reinforce the importance

of sociology: all properly human phenomena are historical and social, biology stops beyond the individual.[151] 'For Comte', Lévy-Bruhl has said of Comte's later work, 'the individual is an abstraction; society is the true reality. Humanity must not be explained by man, but on the contrary man needs to be explained by humanity'.[152] On this basis, there seems little room for Gall's physiology and organology, lacking as it does, any notion of human collective evolution.[153] Gall's work has declined in status from 1837 to 1851. From a position of irrefutable scientificity it drops to become a positivistic irrelevance. At best, Gall's organology is described as a 'precursor' - though of what Comte wisely keeps silent.[154] In his demands that Gall's system be founded on an anatomical and physiological basis, Comte was influenced by criticisms he had earlier heard from Henri de Blainville. Though Blainville had been a hostile opponent of Cuvier's Report,[155] it was his pressure upon Comte that sowed the doubts in Comte's mind;[156] this along with the criticisms of the French scientific establishment were the major factors propelling Comte to a final rejection of phrenology.

The nature of the scientific establishment in France explains in large part the death of phrenology there in the 1840s. By the early part of the nineteenth century, as we have seen, science had become a profession, with its specialised journals and rigorous educational standards, soldered by a powerful elite. France, one historian

has written concerning the early decades of the century, was envied by men of scientific bent in other countries where there were neither educational facilities nor a significant number of posts which could employ scientific talents'.[157] Gall was rigorously excluded from the mainstream scientific community in France. In England however, the situation was very different. Here professionalisation came much later; as late as 1851 Charles Babbage could comment that 'science in England is not a profession; its cultivators are scarcely recognized even as a class'.[158] One immediate consequence was that whereas in France popular and literary journals concerned themselves very little with science, in Britain periodicals such as the Edinburgh Review, the Gentleman's Magazine, and the Quarterly Review maintained a constant interest in issues in biology, physics, chemistry and other sciences. Scientific discussion often took place in literary and philosophical societies where science was part of an educated working-class and middle-class culture rather than a specialised activity for a professional elite. Writing in the 1850s on the death of phrenology in France a decade earlier, G.H. Lewes found the explanation to lie in the absence in France of a large 'thinking public'. Whereas on the Continent the questions raised by phrenology were treated solely by physiologists and psychologists, there existed in England and America, Lewes wrote, 'a very large class of what may be loosely styled the general thinking public, formed of men not specially trained either as metaphysicians or physiologists, yet

interested in all philosophical speculations, and willing to give all systems a fair hearing. It is from this class that teachers and adepts of Phrenology are formed; and as the class is numerous, and contains many capable men, it reacts upon the medical profession, and enables many to disregard the verdict of authorities, and to *judge for themselves*.'[159]

Gall's system as he had reorganized it was perfectly suited to this kind of well-informed, non-specialist, public assessment. John Forbes in a lengthy article on phrenology had isolated this aspect as crucial for the success or failure of Gall's work in England. The phrenologists, he said, had amassed a huge quantity of facts in favour of their system; to be overturned the opponents of phrenology had to amass an equal quantity of evidence.[160] Lewes echoed the sentiment but called on phrenologists themselves to cease accumulating *corroborative* instances and turn their attentions instead to data which *contradicted* their findings.[161] Whereas Lewes shared Comte's earlier feelings that Gall's work needed to be more rigorously established, he did *not* call for the scientists themselves to do this work but issued the challenge to the general public and to the large body of phrenologists.

The same 'English reaction' can be found in J.S. Mill's case. In 1835, Mill had received a copy of a book by the phrenologist George Combe; he read it, he said, 'without

prejudice',[162] but it seems not to have remained in his mind. Seven years later, indeed, during a period in which Comte was still a supporter of Gall, Mill received a mild rebuke from Comte. Mill had just read the Fonctions du cerveau but had been unimpressed. The reason he gave had nothing to do with the views of scientists but simply derived from the correlations he had built up on the basis of personal observations of his own.[163] In reply, Comte suggested that Mill continue these observations for another six months or a year; this he felt would quell Mill's doubts.[164] Though Comte mentioned the need for physiological and anatomical evidence to support Gall's work, Mill never responded to this idea. Carrying out Lewes's suggestion, his opinion was that men should judge Gall for themselves. He agreed with Comte on one point however: Gall had overestimated the number of faculties. A figure between 10 or 12 would, Mill felt, be more sensible. The number, Mill added, was derived 'merely from my daily observation.'[165]

This brief examination of a number of responses to Gall allows us to distinguish different kinds of explanation in his work. In France it was common to reject the anatomical findings which Gall had claimed might found his organology and on this basis completely reject phrenology, that is, to make the distinction between different elements in Gall's work but emphasize the primacy of anatomy, then of physiology.[166] This was, we might say in the continental context, a *professional* rejection of Gall's work. An

alternative but still professional reaction was to accept Gall's physiology and elements of his anatomy but then to reject the organological views built upon these.[167] A more recent commentator has suggested that phrenology was rendered impossible by theoretical advances in physiology and anatomy.[168] We can now see the elements of truth in this statement: firstly, that Gall recognised this in the years between 1819 and 1822 and therefore reorganised a new, popular organology which was not based on these sciences; secondly, that in France this was found unacceptable and because of the structure of the scientific community the new phrenology *was* rendered impossible; and thirdly, that in England *phrenology seems on the contrary to owe its birth precisely to the death it suffered in France before 1819 and to its subsequent resurrection in a new guise.*

NOTES: PART THREE, CHAPTER NINE

1. Gall's initial observations are carefully and admiringly reported in the 'Biography of Dr. Gall' printed in his On the Functions of the Brain and Each of its Parts: with Observations on the Possibility of Determining the Instincts, Propensities, and Talents, or the Moral and Intellectual Dispositions of Men and Animals, by the Configuration of the Brain and Head, 6 Volumes, Boston, 1835 (henceforth 'OFB'); see I, 2 and I, 60. Gall also repeats the natural history of his discovery at intervals throughout the text, e.g. III, 109.

2. OFB, I, 2.

3. George Combe, 'Biographical Essay on Gall', n.d., NLS 7449, f2(v); see a 'note on abbreviations', chapter 10 notes, for details. OFB, I, 60. See also Erna Lesky, 'Gall, Ahnherr der Wiener Psychiatrie', Wiener Klinische Wochenschrift, 79, 1967, 912-23.

4. See Joseph Jastron, 'The Antecedents of the Study of Character and Temperament', Popular Science Monthly, 86, 1915, 590-615, 601.

5. OFB, III, 109.

6. In Nahum Capen, Reminiscences of Dr. Spurzheim and George Combe, New York, 1881, 70-86 and in OFB, I, 7-19 (a translation from a French version of the Letter published in the Journal de la

Société Phrénologique de Paris).

7. OFB, I, 7.

8. Gall was a close friend of Anton Von Störck, successor to Van Swieten and physician to Emperor Joseph II and to Francis I at the start of his reign; when Störck died, Gall was to have been appointed his successor as 'body-physician to the Emperor' according to Bernard Hollander. This is however unlikely as Störck died in 1803 after the government's prohibition of Gall's lectures (see Bernard Hollander, In Search of the Soul and the Mechanism of Thought, Emotion, and Conduct, 2 vols, 1920, I, 324.

9. See P.J. Möbius, Franz Joseph Gall, in Ausgewählte Werke, 8 vols, Leipzig, 1903-07, VII. Episode on VII, 8-12. Though Gall seems to have been granted the opportunity to seek a licence to lecture, he preferred to maintain silence (see OFB, I, 19; Charles Gibbon, The Life of George Combe, 2 vols, 1878, II, 17). The censorship Gall experienced took the form of a general edict prohibiting all private lectures unless special permission was obtained, though there is little doubt that Gall was its prime target, the church having singled him out for his 'materialistic tendencies'.

10. See Erich Ebstein, 'Gall in Defence of his Theory on the Basis of an Hitherto Unknown Correspondence', Medical Life, 30, 1923, 369-72, 370.

11. See Owsei Temkin, 'Gall and the Phrenological Movement', Bulletin of the History of Medicine, XXI, 3, 1947, 275-321, 278.

12. J.G. Spurzheim, Phrenology, or the Doctrine of Mental Phenomena, 2 vols, Boston, 1835, I, 112.

13. F.J. Gall and J.G. Spurzheim, Recherches sur le système nerveux en général, et sur celui du cerveau en particulier; Mémoire présenté à 1'Institut de France, le 14 Mars 1808; suivi d'observations sur le rapport qui en a été fait à cette compagnie par ses commissaires, Paris, 1809.

14. Goethe requested private lectures after he had met Gall in 1805 (see Möbius, Gall, 12f.; A.D. Coleridge (ed), Goethe's Letters to Zetter, 1887, 406n; also Goethe's letter to Willemer, 24 January 1803, and to August, 28 August 1805, in Karl Robert Mandelkov (ed), Goethes Briefe, 4 vols, Hamburg, 1962-7, II, 439 and III, 13 respectively). Blumenbach and Bischoff were also impressed by Gall's anatomical demonstrations (see Blumenbach's 'Letter to Dr. Albers, Sept. 1805', Phrenological Journal, XIX, 86, 1846, 41-2; and M. Bischoff's claim that he 'found more in the dissection of the brain carried out by Gall, than he ever thought possible for a man to discover in a lifetime', in J.B. Demangeon, Physiologie intellectuelle ou 1'esprit de 1'homme, Paris, 1843, 559).

15. Seven of these are listed in the article 'Craniscopy', Supplement to the Fourth, Fifth, and Sixth Editions of the Encyclopaedia Britannica, Edinburgh, 1824, III, 422. The Lettre de Charles Villers à Georges Cuvier, de 1'Institut National de France (Metz, 1802) was already well-known, even in Britain where it was reviewed in the Edinburgh Review, with the opening remark, 'Of Dr Gall, and his skulls, who has not heard?'

(Thomas Brown, 'Review of Lettre de Charles Villers...', II, 1803, 147-60, 147). The Edinburgh Medical and Surgical Journal reviewed T.C. Rosemuller's account of Gall's German tour (anon., 'Account of Dr Gall's Discoveries Regarding the Structure of the Brain', II, 1806, 320-24) and shortly after reviewed two more accounts, beginning with 'Everybody has heard something about the celebrated Dr Gall and his doctrine of Cranioscopy' (anon., 'Prof. Bischoff's Account of Dr Gall's Cranioscopy', II, 1806, 354-66). This last reviewer also remarked that 'it appears not unworthy of remark, among the swarm of publications upon this subject, of the host of expositions, refutations, criticisms, and explanations, not one is the work of Gall's own hands' (ibid., 355). A year after the review, one of the books mentioned was translated into English: C.W. Hufeland, Dr Gall's New Theory of Physiognomy (1807) - note the title! Jean-Baptiste Demangeon was another one who attended Gall's German lectures and presented these to a French audience in his La physiologie intellectuelle, ou développment de la doctrine du Docteur Gall, Paris, 1806.

16. See O. Temkin, 'The Philosophical Background to Magendie's Physiology', Bulletin of the History of Medicine, 20, 1946, 10-35; 'Materialism in French and German Physiology of the Early Nineteenth Century', ibid., 322-27; Georges Canguilhem, 'La Constitution de la physiologie comme science', Etudes d'histoire et de philosophie des sciences, Paris, 1975, 226-73. An excellent study of Gall's work and its reception in France which deals in great detail with developments in the theory of cerebral localization on the continent is Georges Lanteri-Laura, Histoire de la phrénologie. L'Homme

et son cerveau selon F.J. Gall, Paris, 1970.

17. Owsei Temkin, 'Gall and the Phrenological Movement', 289-90.

18. See Hollander, Search of the Soul, 207-10. See on the powerful network of oral communication in France at the time, and the way this spread knowledge of Gall's work: Demangeon, Physiologie intellectuelle, Preface; and the Introduction to J.-B. Nacquart, Traité sur la nouvelle physiologie du cerveau, Paris, 1808. For early contemporary reactions, see F. Nivèlet, Gall et sa doctrine, Paris, 1890, 14-17.

19. ibid., 239.

20. Gall and Spurzheim, Recherches sur le système nerveux.

21. See Emmanuel Las Cases, Mémorial de Saint-Hélène (1823), 2 vols, Paris, 1961, II, 57-8 where Las Cases reports his conversations with Napoleon.

22. OFB, I, 22-3. Although Britain and France were at war, the Institut awarded Davy a medal and a prize in 1807 for his experimental researches in chemistry and electricity (see Harold Hartley, Humphry Davy, 1966, 54).

23. The Report appears as one of the earliest expositions in English of Gall and Spurzheim's doctrines, like the majority, critical. See anon., 'Review of Report on a Memoir of Drs Gall and Spurzheim, Relative to the Anatomy of the Brain. By MM. TENON, PORTAL, SABATIER, PINEL, and CUVIER, presented to, and adopted by the Class

of Mathematical and Physical Sciences of the National Institute', The Edinburgh Medical and Surgical Journal, V, 1809, 36-66.

24. ibid., 65.

25. F.J.V. Broussais, 'Lectures on Phrenology, Delivered in 1836, in the University of Paris, Lecture V', The Lancet, 30, ii, 1836, 545-52, 546.

26. Paul Delaunay, 'De la physiognomie à la phrénologie. Histoire et evolution des écoles et des doctrines', Le Progrès Medical, 31, 1928, 1279-1290, 1279.

27. Temkin, 'Gall and the Phrenological Movement', 293-95; see Broussais's Cours de phrénologie fait a la faculté de médecine de Paris, Paris, 1836. Though frequently seen as a last effort to regain popularity (e.g. by Pierre Huard, 'Broussais, François Joseph Victor', OSB, Temkin's arguments to the contrary are persuasive.

28. See E. Ackerknecht, 'La Médecine à Paris entre 1800 et 1850', Conférences du Palais de la Découverte, Paris, 1958, 8; and his Medicine at the Paris Hospitals, 1794-1848, Baltimore, 1967.

29. This is essentially a more inexpensive version of the Anatomie et physiologie, without the atlas volume and with the addition of a final, sixth, volume of replies to his critics. However, there are some textual alterations, so although my major source is OFB I have also referred to this first major statement. Its full title is Anatomie et physiologie du système nerveux en général, et du cerveau en particulier, avec des observations sur

la possibilité de reconnoitre plusieurs dispositions intellectuelles et morales de l'homme et des animaux, par la confirmation de leurs têtes (4 vols, Paris, 1810-19; vols 3 and 4 have Gall as the sole author). This work, which was sold along with a volume of plates, was priced at 1000 francs, and as Spurzheim recognized was destined for library use (see Spurzheim to Combe, 10 May 1818, NLS 7203, fo. 107).

30. H. Royer-Collard, 'Examen critique des travaux anatomiques et physiologiques de M. le docteur Gall', Journal Hebdomadaire de Médecine (Paris), I, 1828, 138-161, 138.

31. OFB, I, 30-6; 'Biographical Sketch of the Celebrated Gall', The London Medical and Physical Journal, n.s. IX, 1831, 280-81, 281; 'Notice nécrologique et médicale sur Jean-Joseph Gall', Annales de la médecine physiologique (Paris), XIV, 1828, 264-95, 265.

32. OFB, I, 55.

33. A list on OFB, I, 89-90 is vague but seems to offer 30 faculties.

34. The faculties are treated in the OFB as follows:

1. III, 141-263, 295.
2. III, 263-99.
3. III, 299-316.
4. IV, 13-50.
5. IV, 50-119.
6. IV, 119-28.
7. IV, 128-56.
8. IV, 156-83.
14. V, 7-18.
15. V, 18-46.
16. V, 46-59.
17. V, 59-80.
18. V, 80-98.
19. V, 98-120.
20. V, 121-28.
21. V, 129-31.

9. IV, 184-95.
10. IV, 195-233.
11. IV, 233-61.
12. IV, 261-84.
13. V, 1-7.
22. V, 131-42.
23. V, 142-56.
24. V, 156-200.
25. V, 201-15.
26. V, 215-43.
27. V, 243-51.

35. See OFB, V, 247-49.

36. See, for an early version of this criticism, Jean Verdier, La Crânomancie du docteur Gall anéantie au moyen de l'anatomie et de la physiologie de l'âme, Paris, 1808.

37. Spurzheim made the list up to thirty-three; Charles Villers stopped at thirty (Lettre de Charles Villers); Jastron interpreted Gall as setting out only twenty-four faculties ('Antecedents'). Many phrenologists sought to make their name by discovering 'new' organs and faculties, like Vimont who found a new region for a sense of beauty in art (Traité de phrénologie humaine et comparée, Paris 1835), and Thomas Forster who named a new organ 'Mysterizingness' and added it to Spurzheim's (see 'Review of Spurzheim and Forster', in Gentleman's Review, LXXXV, 1815, 440-44, 441), and the opportunism was ridiculed by F. Lélut in Qu'est-ce que la phrénologie?, Paris, 1836.

38. See Anatomie et physiologie, I, 107.

39. Charles Gibbon, George Combe, I, 136ff.

40. See F. Lélut, La Phrénologie, 360f., and A. Garnier, La Psychologie et la phrénologie comparées, Paris, 1839, 17f.

41. See Charles Blondel, La Psycho-physiologie de Gall, ses idées directrices, Paris, 1941, 25; and Howard Davies Spoerl, 'Faculties Versus Traits: Gall's Solution', Character and Personality, IV, 1935-36, 216-31.

42. OFB, III, 82, see also 81-7.

43. OFB, I, 83.

44. OFB, VI, 248.

45. OFB, VI, 255.

46. See Anatomie et physiologie, IV, 240f.

47. e.g. at the start of Anatomie et physiologie, I, xxvii to xxxii.

48. OFB, V, 250.

49. See OFB, III, 86.

50. See Royer-Collard, 'Examen critique', 146, and OFB, III, 140.

51. See Erich Ebstein, 'Franz Joseph Gall im Kampf um seine Lehre auf, grund unbekannter Briefe an Bertuch usw. mit zwei Bildern Galls', in C. Singer and H.E. Sigerist (ed.), Essays on the History of Medicine Presented to Karl Sudhoff, 1924, 269-322.

52. See the remarks of Andrew Combe in 'The Substance of an Address to the Students of Anderson's University', The Lancet, i, 1846, 61-4; Owsei Temkin, 'Remarks on the Neurology of Gall and Spurz-

heim', in E. Ashworth Underwood (ed.), Science, Medicine and History: Essays on the Evolution of Scientific Thought and Medical Practice Written in Honour of Charles Singer, 2 vols, 1953, II, 282-89.

53. Erwin H. Ackerknecht provides a useful overview of Gall's anatomy in 'Contributions of Gall and the Phrenologists to Knowledge of Brain Function', in F.N.L. Poynter (ed), The History and Philosophy of Knowledge of the Brain and its Functions (Oxford, 1958, 149-53), as does Erna Lesky, 'Structure and Function in Gall', Bulletin of the History of Medicine, XLIV, 4, 1970, 297-314; Bernard Hollander, 'The Centenary of Francis Joseph Gall 1758-1828', Medical Life, 35, 1928, 373-80; Lanteri-Laura, Histoire, 73-115; and Temkin, 'Remarks on Neurology'.

54. e.g. Royer-Collard, 'Examen critique', 139-40; see also Hollander, Search of the Soul, 199-229 for further contemporary opinion.

55. See O.L. Zangwill, 'The Cerebral Localization of Psychological Function', Advancement of Science, 20, 1963, 335-44 for an assessment of this work; also Robert M. Young, Mind, Brain and Adaptation in the Nineteenth Century. Cerebral Localization and its Biological Context from Gall to Fourier, Oxford, 1970, 23-37. Gall and Spurzheim's anatomical work was presented in the 1808 memoir, Recherches sur le système, and in the first volume of Anatomie et physiologie.

56. Gall and Spurzheim, Recherches sur le système, 168-69.

57. F.J. Gall and J.G. Spurzheim, 'Cerveau' in Dictionaire des sciences médicales par une société de médecins et de chirurgiens, 59 vols, Paris, 1813, IV, 447-79, 466.

58. ibid., 448.

59. Owsei Temkin, 'Gall', 279.

60. Ackerknecht, 'Contributions', 149.

61. See ibid., 151. Cuvier's report had singled out this 'evolutionism' for particular censure; Hollander finds it one of the high points of Gall's genius (In Search of Soul, 199-200).

62. Erwin H. Ackerknecht and Henri V. Vallois, Franz Joseph Gall, Inventor of Phrenology and His Collection, Madison, Wisconsin, 1956, 13.

63. anon., 'Review of Report', 64-66.

64. See for this point, Erna Lesky, 'Structure and Function', 299.

65. See the Appendix in Temkin, 'Gall', 313-14, which provides extracts from Gall's 1791 Philosophisch-medicinische Untersuchungen über Natur und Kunst im kranken und gesunden Zustande des Menschen. I have not consulted the original since it does not (according to Temkin, ibid., 276) contain any of Gall's phrenological views. The Philosophisch-medicinische was a work of only two chapters and was never completed (see anon., 'Gall, Franz Joseph', in The Encyclopaedia Britannica, 28 vols, 1926 (13th ed.), XI, 411.

66. Quoted in Blondel, Psycho-physiologie, 33.

67. See, for example, OFB, VI, 80.

68. OFB, II, 202.

69. See Walther Riese, 'F.-J. Gall et le problème des localisations cérébrales', L'Hygiène mentale, XXXI, 5, 1936, 105-36, 133-34.

70. See Blondel, Psycho-physiologie, 32; Lesky, 'Structure and Function', 299.

71. W. Riese describes Flourens at this period as a cerebral localizer ('An Outline of a History of Ideas in Neurology', Bulletin of the History of Medicine, XXIII, 2, 1949, 111-36, 122-3); a great exaggeration since Flourens was critical both of the early 1808 Memoir and of Gall's project as a whole. This is clear from Young's treatment of the Flourens-Gall controversy.

72. See J.M.D. Olmsted, 'Pierre Flourens' in Underwood, Science, Medicine, II, 290-302; E. Clarke and C.D. O'Malley, The Human Brain and Spinal Cord. A Historical Study Illustrated by Writings from Antiquity to the Twentieth Century, Berkeley, 1968, 483-88, 656-61; Edwin G. Boring, A History of Experimental Psychology, New York, 1957, 62-7.

73. Quoted in Zangwill, 'Cerebral Localization', 335.

74. Fancher correctly notes that 'Cuvier's endorsement guaranteed that Flourens' work would be greeted enthusiastically, though it was good enough to stand out on its own' (Raymond E. Fancher, Pioneers of Psychology, New York, 1979, 54).

See also Young, Mind, Brain and Adaptation, 57-8, and Olmsted, 'Pierre Flourens', 292-94.

75. OFB, VI, 237-8.

76. OFB, VI, 166 (the order of the sentences has been reversed but the sense preserved).

77. OFB, VI, 239.

78. OFB, VI, 175.

79. OFB, VI, 239.

80. ibid.

81. ibid.

82. Quoted in French in Walther Riese and Ebbe C. Hoff, 'A History of the Doctrine of Cerebral Localization. Second Part: Methods and Main Results', Journal of the History of Medicine and Allied Sciences, VI, 1951, 439-70, 442-3.

83. anon., 'Recent Discoveries on the Physiology of the Nervous System', Edinburgh Medical and Surgical Journal, XXI, 1824, 141-59, 154.

84. Erna Lesky, 'Gall und Herder', Clio Medica, 2, 1967, 85-97.

85. Blondel, Psycho-physiologie, 21-22, 50.

86. Lesky, 'Structure and Function', 309-12.

87. For strong statements, see OFB, III, 67 and Anatomie et physiologie, I, vii.

88. See Johann Gottfried Herder, Ideen zur Philosophie der Geschichte der Menschheit, 2 vols, Berlin, 1965, Book 5, Chapter I, I, 164-8. Interestingly, one scholar has written that Herder's anatomy was no more than a 'physiognomy spread over the whole body' (Max Rouché, La Philosophie de l'histoire de Herder, Paris, 1940, 201).

89. Jacques Roger, Les Sciences de la vie dans la pensée française du XVIIIe siècle, Paris, 1971, 651-3; Philip C. Ritterbush refers to Bonnet's notion of the scale of beings as 'naive' (Overtures to Biology. The Speculations of Eighteenth-Century Naturalists, New Haven, 1964, 197).

90. e.g. Anatomie et physiologie, II, 13; III, 52; OFB, I, 92-4; II, 17.

91. See Anatomie et physiologie, I, 157; III, 152-3; IV, 37.

92. OFB, I, 92.

93. OFB, I, 162.

94. Arthur O. Lovejoy, The Great Chain of Being, Cambridge, Mass., 1978, 242ff. William F. Bynum and John C. Greene have both made the point (Bynum aiming it specifically against a deficiency he finds in Lovejoy's study) that a 'temporalized' chain of being should not be naively equated with proto-evolutionary theories ('The Great Chain of Being after Forty Years: an Appraisal', History of Science, XIII, 1975, 1-28, esp. 6 and Greene's The Death of Adam. Evolution and its Impact on Western Thought, Ames, Iowa, 1959). This makes a complete assessment of Gall's already complex

position even more difficult and claims that his view of nature was derived solely from Bonnet or Herder in need of further investigation. Recent research on Bonnet, for example, suggests that Ritterbush's claim (see note 89 above) may itself be naive (see, for example, François Jacob, La Logique du vivant. Une histoire de l'hérédité, Paris, 1970, 56-7, 151-2).

95. OFB, VI, 160.

96. OFB, VI, 147.

97. See F. Lélut, Rejet de l'organologie phrénologique de Gall, et de ses successeurs, Paris, 1843, esp. 40, 83, where Gall's apparent volte face is targetted for virulent censure.

98. Riese, 'F.-J. Gall', 114; see also Walter Riese, 'Les Discussions du problème des localisations cérébrales dans les sociétés savantes du XIXe siècle et leurs rapports avec des vues contemporaines', L'Hygiène Medicale, XXXI, 6, 1936, 137-58. The shift in Gall's thinking which we are exploring in this section has never been acknowledged by historians; Lanteri-Laura, typically, claims that there exists no change in Gall's views from 1792 to 1825 (see Histoire, 72, 83-84, 87).

99. OFB, V, 321.

100. ibid.

101. ibid.

102. OFB, VI, 156.

103. See Riese, 'F.-J. Gall', 134f.

104. ibid.

105. This is a position already declared, at least implicitly, in Anatomie et physiologie, IV, 126 and II, 69. See Temkin, 'Gall', 284.

106. OFB, V, 320.

107. OFB, VI, 310.

108. OFB, I, 60. See on this point, Nacquart, Traité, 42-60. Gall does make some reference to the evidential importance of dreams (see on this Lanteri-Laura, Histoire, 91, 98-99).

109. See Anatomie et physiologie, II, 7; OFB, I, 173, II, 51.

110. See Anatomie et physiologie, V, 190ff. and Temkin, 'Gall', 300ff.

111. OFB, III, 74.

112. OFB, II, 35-6; see also the early Letter to Retzer, ibid., I, 14.

113. OFB, III, 91.

114. ibid.

115. OFB, VI, 275-6.

116. OFB, VI, 241-2. Gall's biographer reports that tickets to the Paris Phrenological Society bore on one side Gall's portrait and on the reverse

the motto 'Aux Progrès des Lumières' (OFB, I, 43).

117. OFB, III, 106 (my emphasis), see also III, 165, where this foundation for Gall's system is used to rebutt charges of plagiarism.

118. See OFB, VI, 25-6.

119. One need only compare the difference in tone between the Gall of volume five and volume six of the Fonctions du cerveau to realize that something had happened in the period in between: a series of devastating attacks on the organological system in the vanguard of which stood Flourens. The paragraph which follows comes from the later volume; in volume five, Gall confessed, 'Few are more modest or humble than I am.' (OFB, V, 317).

120. OFB, VI, 269.

121. See OFB, III, 70-3.

122. OFB, I, 6.

123. OFB, V, 317. This quotation illustrates the enormous ability Gall possessed as a propagandist for his cause and as a polemicist. In a short paragraph he manages to deflate the charge of plagiarism, to be a man of the people ('I can't understand this man Kant'), to make a point about his own style, to attack the German philosophical audience, to lump together a number of different authors, and to classify a variety of subjects together. The misspelling of Fichte's name adds injury to insult. But, of course, as we have noted, Gall's ability to polemicize only

shows up his weaknesses when faced with a more powerful adversary.

124. OFB, I, 68.

125. OFB, I, 137. See also OFB, I, 138-45; II, 210; V, 82-3.

126. Essays on Physiognomy, 452.

127. See Temkin, 'Gall', 301-05.

128. Lesky, 'Gall und Herder', 95.

129. Jason Y. Hall, 'Gall's Phrenology: A Romantic Psychology', Studies in Romanticism, 16, 1977, 305-17, 311.

130. Auguste Comte, Cours de philosophie positive (1830-42), 6 vols, Paris, 1864, III, 537.

131. The Calendrier Positiviste is reproduced in the Système de politique positive, 4 vols, Paris, 1851-54, IV, 402-3; quotation from p. 390. See also Mike Shortland, 'Disease as a Way of Life', Ideology and Consciousness, 9, 1981-2, 113-23, 115. Gall's Les Fonctions du cerveau is also included in the 150 volumes of the Bibliothèque Positiviste.

132. Comte, Cours, III, 534. It is interesting to note that in Harriet Martineau's English translation of the Cours, she quietly extends Gall's reign from a 'third of a century' to 50 years. In England in 1853, it seems, phrenology was still going strong (The Positive Philosophy of Auguste Comte, trans. H. Martineau, 2 vols, 1853, I, 459).

133. Comte, Cours, III, 534ff.

134. Comte, Cours, III, 584-6.

135. Comte, Cours, III, 556, 571.

136. Comte finds Gall's 27 faculties to be far too many and suggests instead a figure around 12-15 (Cours, III, 573-4).

137. This is clear from his 'Examen du traité de Broussais sur l'irritation', in A. Comte, Opuscules de philosophie sociale 1819-1828, Paris, 1883, 290-306. Pages 291-2 treat Gall and Spurzheim. Comte's 45th Lesson forms part of a 'psychological' section of a work which proscribes psychology; see on this Charles Blondel, Introduction à la philosophie collective, Paris, 1928, chapter one; and G. Dumas, Nouveau traité de psychologie, 2 vols, Paris, 1930, I, 335ff.

138. E. Littré, Auguste Comte et la philosophie positive (1845), Paris, 1864, 546; see also 542-5.

139. 'Sociology' was almost simultaneously 'created' by a writer on Comte in Blackwood's and by J.S. Mill in Book VI of his System of Logic (1843). See on this Göran Therborn, Science, Class and Society. On the Formation of Sociology and Historical Materialism, 1976, 115-17; and Philip Abrams, The Origins of British Sociology 1834-1914, Chicago, 1968, 55. On the Sociology, see the extract in S. Andreski (ed), The Essential Comte, 1974, 144-45; and for comment on the constitution of Sociology and its place in the Cours, see Ted Benton, Philosophical Foundations of the Three Sociologies, 1977, chapter 2, esp.

37-45; A. Swingewood, 'Comte, Marx and Political Economy', Sociological Review, 18, 1970, 335-50; and R. Fletcher, Auguste Comte and the Making of Sociology, 1966, passim. It is true that some remarks at the end of the first volume of the Système find Comte defining the moral problem in a language adapted from Gall (and Broussais). Comte writes for example of the problem, 'how to make the 3 social instincts, assisted by the 5 intellectual organs, surmount as a matter of habit those impulses of the 7 personal tendencies, by reducing these to the minimum of indispensible satisfactions in order to consecrate the 3 active organs in the service of sociability (Système, I, 733). But then, the very goal itself subverts the physiopsychological jargon rather than, as one critic has suggested, upholding it (see Frank E. Manuel and Fritzie P. Manuel, Utopian Thought in the Western World, Oxford, 1979, 731).

140. Comte, Système, I, 64-5.

141. ibid., I, 622, 632; II, 437.

142. ibid., I, 637-8.

143. ibid., I, 666-69.

144. ibid., I, 680.

145. ibid., I, 673.

146. ibid., I, 637-8. On the whole, Comte's emphasis lies on what Gall did negatively rather than on his positive contributions. Comte sees himself at one point differing as much from Gall as Gall

did from the metaphysicians (see ibid., I, 707-9).

147. ibid., I, 677.

148. ibid., I, 671. Littré, Auguste Comte, 548, and Jean Delvolvé (in Réflexions sur la pensée Comtienne, Paris, 1932, 109) both attack Gall's subterfuge which subordinated anatomy to physiology simply because Gall recognized that anatomy would never provide him with the corroborative evidence he sought.

149. Comte, Système, I, 673.

150. ibid., I, 708.

151. ibid., IV, 350, 386-91.

152. Lucien Lévy-Bruhl, La Philosophie d'Auguste Comte, Paris, 1900, 271. Herein lies Comte's famous but still startling aphorism that 'Humanity is made up more of the dead than the living' (quoted in Henri Gouhier, 'Introduction', Oeuvres choisies d'Auguste Comte, Paris, n.d. (c. 1953), 17).

153. See Comte, Système, IV, 221.

154. See Blondel, 'Psycho-physiologie', 2ff. for a treatment of this decisive shift in Comte's estimation of Gall.

155. Comte never met Gall, but was in close contact with one of his former pupils, Dr Bailly and it was Bailly who first guided Comte through Gall and Spurzheim's work from 1817 to 1825 (see

Henri Gouhier, La Jeunesse d'Auguste Comte, 3 vols, Paris, 1941, III, 237-40). Blainville's strong impact on Comte's views of Gall is described in ibid., III, 410-13.

156. See Comte's speech at Blainville's funeral (in Comte, Système, I, 737-46) and Delaunay, 'Physiognomie', 1279-84.

157. M.P. Crosland, 'The Development of a Professional Career in Science in France', in Crosland, The Emergence of Science, 139.

158. Quoted, ibid., 154.

159. G.H. Lewes, 'Phrenology in France', Blackwood's Edinburgh Magazine, LXXXII, 1857, 665-74, 665 (my emphasis). This assessment may be contrasted to one made by a British reviewer who in 1806 predicted that 'there is no danger of Gall's theory making much progress in this quarter of the world'. The explanation offered was that phrenology had only found roots in France because of the continental love of 'systematic novelty'. (anon., 'Prof. Bischoff's Account of Dr Gall's Cranioscopy', 365-6). Of course, as we have argued, some time afterwards Gall began to destroy the systematicity of his doctrine; this would serve to increase the danger of invasion across the channel.

160. anon., 'Review Article on Phrenology', British and Foreign Medical Review, IX, 1840, 190-215, 206.

161. Lewes, 'Phrenology', 673.

162. See Mill's letter to John Pringle Nichol, 7 October 1835, in Francis E. Mineka (ed), The Earlier Letters of John Stuart Mill, 2 vols, Toronto, 1963, I, 275.

163. See Mill to Comte, 30 October 1843 in Earlier Letters, II, 605; Mill to Comte, 6 May 1842, ibid., 517-19; and Mill to Comte, 9 June 1842, ibid., 524-27.

164. See Comte's letter to Mill dated 19 June 1842 in Paulo E. de Berredo Carneiro and Pierre Arnaud (eds), Correspondance générale et confessions d'Auguste Comte, 3 vols, Paris, 1973-77, II, 51-5.

165. See Mill's letter to Comte of 11 July 1842 in Earlier Letters, II, 529-32. By 1843, Mill was already at work on his plan for a book on ethnology and never again raised the question of Gall.

166. See for example Royer-Collard, 'Examen'; Verdier, 'Crânomancie'; and Lélut, La Phrénologie.

167. This aspect is treated in Riese, 'F.-J. Gall', 108ff. and by Temkin, 'Gall', 293-95 with respect to the reaction of Broussais.

168. Boring, Experimental Psychology, 52.

CHAPTER TEN: THE LEGIBLE BODY- A PUBLIC READING

I. Spurzheim and the Introduction of Practical Phrenology into Britain

Johann Caspar Spurzheim left Gall in Paris in 1813, having contributed to volume one and the first part of volume two of the Anatomie et physiologie. Gall announced that his former collaborator had departed to 'continue collecting facts' and to spread the doctrine of the functions of the brain.[1] There is, however, more than a hint of personal conflict existing between them,[2] and it would be more accurate to see Spurzheim's mission as being to propagate a popular version of phrenology in the English-speaking world. He had earlier come into conflict with Gall over the handling and aims of the lecture tour through the German states and complained bitterly that too little time and energy was being devoted to forming organizations and groups of followers. His plan was now to inaugurate groups of 'practical pupils'.[3] To this end, he mastered the rudiments of English, added an M.D. to his name in Vienna, and arrived in London in March 1814.

'Cranioscopy' and 'organology' had received considerable publicity in the British press in the first decade of the century; although this had on balance favoured the doctrines, a lasting impression had been made by a small

number of ferocious reviews in the most notable literary journals.[4] Outstanding amongst these had been the lam-blast by Thomas Brown in 1803 in the pages of the newly re-constituted Edinburgh Review which depicted the work of Gall and Spurzheim as confused, baseless, feeble, objectionable, and possibly dangerous.[5] As a result of international conflicts, there existed in addition a strong current of zenophobia in the country which ex-pressed itself within the medical profession in the form of a hostility towards the importation of continental brands of pseudo-scientific windbaggery and charlatan-ism.[6]

Spurzheim's reception was, as expected, hostile. Though he was able to perform some brain dissections before the Medico-Chirurgical Society in London and demonstrate the fibrous nature of the brain, his attempt to follow these with a course of lectures on physiology and ana-tomy ended before it had begun in failure. Spurzheim left the capital for the West country and here he spoke to more varied audiences on a larger variety of sub-jects. His lectures were received with somewhat greater enthusiasm and were repeated in Ireland.[7] By 1815, Spurz-heim felt that the tide was turning in his favour: his public was growing, its memories of hostile reviews fading, and his reception, if not as animated as it had been in Paris, was generally keen and inquisitive. No doubt informed of the gradual impression Spurzheim was making, the editor of the Edinburgh Review, Francis

Jeffrey, commissioned another attack. The result this time was quite devastating: Spurzheim halted in his tracks, then retreated for a period, regrouped his forces, and launched another campaign.

The author this time was Dr John Gordon, who felt that a final blast was required even though Blackwood's had predicted organology's early demise and Brown had called for Gall's 'craniological death'.[8] The reason the beast had survived, according to Gordon, was that the whole land had since opened its frontiers to barbarian hordes of medicine mongers and horse doctors. 'Great Britain', he fulminated, 'is a field for quacks to fatten in; they flock to it from all corners of the world' - adding (perhaps a little unkindly) that 'England is the sweetest corner of the pasture'.[9] In a long vituperative attack he then proceeded to issue a general warning against the 'cunning craniologers' to protect his readership the time and money they might feel seduced into putting into Spurzheim's palm.[10] The tone of the article, its self-assurance and seeming finality, did more damage than its specific comment. Gordon began by asserting that 'we look upon the whole doctrines taught by these two modern peripatetics, anatomical, physiological, and physiognomical, as a piece of *thorough quackery* from beginning to end',[11] and closed proceedings with the claim that 'the writings of DRS GALL and SPURZHEIM, have not added one fact to the stock of our knowledge, respecting either the structure or the function of man'.[12]

Gordon's contribution was one of the most savage in a journal that made a speciality out of censorious expositions of scientific pretences - or what it deemed to be such;[13] moreover, it appeared at a period when the Edinburgh Review had begun to wield enormous influence amongst a very large and powerful audience. With some justification, the Phrenological Journal later recalled that at this time the Review was the 'Koran of the reading public' and that phrenology's reception into the country therefore depended 'on the *fiat* of that literary dictatorship'.[14] There is no doubt that Jeffrey constituted a powerful ally or savage foe: 'If Jeffrey was not a great critic', Walter Bagehot wrote in 1855, 'he had, what very great critics wanted, the art of writing what most people would think good criticism. He might not know his subject, but he knew his readers.'[15] Jeffrey estimated that in 1814 each of his issues was read within a month of its publication by at least 50,000 people adding that 'no prose preachers have so large an audience'.[16]

Gordon's review had the immediate result he anticipated: the sale of Spurzheim's work stopped immediately and did not revive for the next four years.[17] Spurzheim hurried to Edinburgh to confront his adversary bearing an introduction and there twice dissected a brain in his presence.[18] Gordon was unimpressed, finding the performance and technique crude and unsound;[19] as he had done before faced with a hostile audience, Spurzheim turned

to the public at large. In front of a large gathering of students he repeated the dissection, wielding a scalpel in one hand and the offending review in the other. His later biographer reminisced - or rather, imagined - that the demonstration effectively counterposed 'fact to assertion',[20] but in fact Spurzheim did no more than demonstrate as he had in London the fibrous nature of the white matter of the brain. What won him a small coterie of supporters were his general remarks on the practical import of phrenology; it was this nucleus which enticed Spurzheim to declare boldly that Edinburgh would be the spot 'from which, as from a centre, the doctrines of phrenology shall spread to Britain'.[21] He knew that for this to happen in reality he would have to appeal beyond the ranks of professional opposition to the public beyond, to the very large thinking public, G.H. Lewes later saw as providing phrenology's audience. For the next few years, however, Spurzheim pursued a double strategy. On the one hand, he published specialist anatomical and physiological texts on the brain; on the other, he issued popular outlines incorporating applications of the doctrine. In quick succession then, he put out The Physiognomical System of Drs Gall and Spurzheim (1815) and an Examination of the Objections made in Britain against the Doctrines of Gall and Spurzheim (1817) as well as a short Outlines of the Physiognomical System of Drs Gall and Spurzheim (1815).

In July 1817, Spurzheim left for Paris and was disheart-

ened to discover there that Gall was able to attract far larger and keener audiences for his lectures.[22] He gave up lecturing for a period and published another work based on physiology and anatomy, Observations sur la folie, ou sur les dérangements des fonctions morales et intellectuelles de l'homme (1818), then a treatise on the anatomy of the brain, and then a work on education. After the French government had prohibited public lectures which had not been sanctioned, Spurzheim returned again to Britain. After seven years absence, Spurzheim was gratified to learn that the 'practical pupils' he had left behind were beginning to wield influence: roots had been sunk, some phrenological societies were being formed, a journal was being published, and some of the newspapers and medical reviews were supporting phrenology. It must have been difficult to resist the tendency and be pulled along by the flow of public support. Spurzheim did not; instead, he gave himself up to large-scale public lecture tours during which he exhibited his collection of skulls and casts as well as performing an assortment of bump-reading tricks on his audience with predictable success.[23] After travelling the length and breadth of the country a number of times, Spurzheim went over to Ireland, then to France in 1831. In June 1832 he crossed the Atlantic to spread the word in America. Here he was hugely effective and died a great celebrity in November of the same year.[24]

* * * *

Most apparent amongst the changes wrought by Spurzheim to Gall's system was the introduction of another eight faculties (or, to be more precise, the addition of seven and the demonstration that Gall's 'educatability' was compound), to bring the total to thirty-five.[25] But in addition, Spurzheim separated the component faculties of the mind into two major groups and then subdivided these. The first group, feelings, is thus split into propensities (internal drives which prompt actions) and into sentiments (which prompt emotions as well as actions). The second group, intellect or intellectual faculties, is divided into perceptive and reflective faculties. Spurzheim refers to these groupings as species, genera, and varieties,[26] and the general classification remains unchanged in this work from 1815. Furthermore, whereas Gall referred to faculties occasionally in terms of the object to which impulses were directed, e.g. the love of offspring, the talent for music, Spurzheim finds these to be merely specific forms of more general drives and instincts. Instead of a talent for music, Spurzheim refers to the perceptive faculty of tune.

What might have been a minor terminological quibble actually takes on rather more importance - Spurzheim denies that there are any 'evil' faculties at all. 'Theft' and 'murder' are merely specific, extreme developments of the faculties of 'acquisitiveness' and 'destructiveness'.[27] One can certainly sympathize with Spurzheim's

desire to tidy up Gall's at times erratic notion of the number and nature of the faculties, yet his justifications for proceeding as he does are weak in the extreme. In the case of 'theft' and 'murder', for example, it will be remembered that Gall never used these terms; moreover, Spurzheim's motives for abandoning them are moral and political rather than empirical. To see them as faculties would be, he states, to naturalize them; this would be both irrational, since the Creator would not bestow harmful faculties upon Man, and dangerous, since one would then be lead to condone acts punishable by state law.[28] According to Spurzheim, Gall failed 'to point out the standard of natural morality'[29] and neglected to stress the religious conventions and underpinnings of phrenology.[30] The differentiation of faculties Spurzheim institutes, as well as the emphasis he places on their vagueness and variety of modes of operation, serves to allay fears that phrenology is fatalistic, atheist, and dangerous. At no point, we repeat, does he give substantial empirical evidence for the changes.

We have alluded above to the decision Spurzheim can be seen to have made to attune phrenology to Lewes's 'general thinking public'; this decision is effected by altering the doctrine in ways to render it more popular and accessible. In 1818, he wrote to George Combe that it was essential for the success of phrenology in Britain that it should be perpetually in the public eye rather than buried in technical treatises - it should be promul-

gated from the podium and the pulpit or it would die.[31] The turn in Spurzheim's work can be noted in two ways: firstly, by measuring the gradual disappearance of all references to anatomy and physiology, and secondly, by taking account of the way in which Spurzheim not only severs all links with Gall but also assumes almost sole responsibility for bringing phrenology into being. Spurzheim aims to have his practical phrenology widely accepted, but also to have it viewed as the only and the original form of the doctrine.

In 1815, Spurzheim presented The Physiognomical System of Drs. Gall and Spurzheim as in essence an English version of the Anatomie et physiologie. The work opens with a lengthy section on the anatomy of the brain, follows this with remarks on its physiology, and then ends with discussions of various cerebral organs and faculties. The rejoinder to attacks in the Edinburgh Review, Spurzheim's Examination of the Objections, follows a rather similar format, with again large parts given to anatomical and physiological exposition.[32] But the Outlines of the Physiognomical System, which also appeared in 1815, was published without any such discussion; indeed, it is expressly 'passed over' with a cursory reference to the Anatomie et physiologie.[33] Here the claim is made that although anatomy should not conflict with findings derived from other procedures,[34] and physiology itself may offer certain clues about the location of new faculties,[35] the *practical usefulness* of the first is

nil, and that of the second rigidly circumscribed.[36] This is a crucial move; what the general reader is asked to negotiate are the problems of accurately examining heads from external appearance, and of developing procedures to note down correlations between cranial developments and notable features of character. He or she is not judged to require any knowledge of anatomy or physiology.

Returning to Paris and to an environment still dominated by Gall, Spurzheim rushed into print with a treatise on insanity which manages both to retain a filiation to the Anatomie et physiologie (he declares that phrenology is inextricably linked with anatomy, physiology, and pathology), and to branch out into practical applications of the doctrine.[37] But, of course, the credit for the Anatomie et physiologie fell largely upon Gall, so Spurzheim took the initiative of publishing a separate work on the anatomy of the brain which, though it was almost a literal reproduction of the first volume of the collaborative Anatomie et physiologie was issued under Spurzheim's name only.

Whilst severing the links between anatomy and physiology and the study of phrenology in his popular works, Spurzheim also reinforced the separation with alterations in the methodological apparatus he set out. A far stronger and more coherent appeal than that present in Gall's last work in 1824-5 was made to a positivistic, fact-

gathering, programme. Whereas Gall maintained throughout that the first step should begin with the demonstration of the innateness of faculties and the dependence of these faculties on material organization, Spurzheim finds it proper to open with the proposition that the brain is the organ of the soul. This is manifestly a more general basis than Gall's; moreover, by a philosophical sleight-of-hand Spurzheim establishes that it cannot be disproved, i.e. the soul cannot be shown to exist by empirical evidence except by having recourse to the activities of the brain. The argument is weak in the extreme, yet Spurzheim finds it a valid, even '*Baconian*' infrastructure upon which to build phrenology.[38] One needs merely to agree that the brain is the organ of the soul for phrenology to be acceptable - for it to be *accepted* requires massive additional evidence correlating cranial design and character. The most fundamental part of the phrenological monument is so basic (for Spurzheim) that none would reasonably dispute it; its superstructure will be so painstakingly and laboriously established (by popular observation) that none could reasonably do so. Arguments of the kind advanced by Dr Gordon and other professionals are powerless since anatomy and physiology play no concrete role in upholding the system.

Phrenology has made a decisive move into the public arena constituted by the scientific-cultural developments we have examined above. Once a correlation of cranial development and character has been noted and advertised,

the task of practical phrenologists is to summon forth as many confirming instances of the correlation as possible. Phrenology proves itself as it grows and establishes itself as it spreads. As the number of observations increases so one is justified in increasing one's faith in the initial hypothesis and reducing the importance attached to criticisms (which come only from a small band of 'armchair philosophers').[39] 'One fact, well observed... is more decisive than a thousand metaphysical opinions', so a thousand facts are correspondingly more powerful than any body of anatomical or physiological disproof.[40] There is no cut-off point at which observations of a phrenological kind should end, for the aim is not only to establish the doctrine but to spread it through the land. Only by practicing phrenology does one become a phrenologist; to begin to criticize the system one must have taken part in the application of a doctrine which the criticism is intended to question; and to so do is to deny the special status of one's criticism. Even if many thousands of observations seemed discongruent, all they would in effect serve to do would be to question one particular correlation, at best dislodge one named faculty for another. This kind of protectionist reasoning lies at the heart of Spurzheim's phrenological enterprise in the Outlines of the Physiognomical System. It occurs again in a work published in Paris in 1822, the Essai sur les principes élémentaires de l'education. One can justifiably say that Spurzheim's practical, popular phrenology is born in 1815 but as

one of a twin. The twin dies in 1820, however, and is not replaced.

Before we turn to an examination of the major themes of the theory and practice of the phrenological movement in Britain, we need first to study the manner Spurzheim was to use to establish himself as the equal partner to Gall in the early anatomical and physiological discoveries. The fact that Gall's work was comparatively little known amongst British phrenologists coloured the latter's perceptions of the history of the growth of the doctrine. But more importantly, by denigrating Gall's pre-eminent role and elevating his own, Spurzheim was to circumscribe what was known and what was ignored of the tenets of the doctrine itself. The consequences of Spurzheim's re-writing of phrenological history were, as we shall later see, disastrous for the unity of the movement across Europe and within Britain.

We have already shown that many of the ideas and doctrines Gall was later to develop at length in the Anatomie et physiologie and the Fonctions du cerveau were prefigured in his 1798 Letter to Retzer; from the late 1790s to the end of the first decade of the nineteenth century, he carried out the researches into the structure and functions of the brain that were finally set down in these treatises. Spurzheim's claim was that after he joined Gall in 1802, he took charge of all the anatomical work,[41] that he played a crucial role in the lecture

tour through Germany and neighbouring states,[42] indeed that he worked to 'extend, to perfect, and *to establish the new doctrine*'.[43]

These claims clash both with Gall's own testimony (which may perhaps be biased) and with the contemporary eye-witness reports of the lecture tour (which have far less reason to be so). John Elliotson reported that Gall had informed him that, from 1802, Spurzheim had primarily been an '*auditeur*' during his lectures and demonstrations and that Spurzheim's contribution to his work had been merely to add slight modifications and 'nuances' to it.[44] Whilst in his reprint of the material of the first volume of the Anatomie et physiologie, Spurzheim had assumed an equal share in many anatomical discoveries,[45] Gall was careful in later volumes of the same work and again in the Fonctions du cerveau to refer to these discoveries as his alone[46] - a point reinforced by his use in other volumes of the authorial 'we'.[47] Whilst Gall never denied that Spurzheim became a good anatomist and dissector of the brain, he always coupled this praise with the reminder that in the early years he had been clumsy and inept, that many moulds and casts have been broken in his apprenticeship.[48] We know, furthermore, that Gall disapproved of Spurzheim's books on education and on insanity published in Paris (though he did not finish reading either);[49] that the 1808 Memoir, the later observations on the *Institut's* Report, and the Anatomie et physiologie were all written by Gall alone - Spurzheim

checked references and participated as a general clerk.[50]

In addition to this evidence, we should note that all the eye-witness reports of the tour Gall and Spurzheim made except one,[51] that is, the articles and books which first announced the doctrines to a wide audience, never mentioned Spurzheim at all. The Marquis Moscati attended the 1806 lectures of Gall in Heidelberg and reported that Spurzheim's role was restricted to handing Gall the casts and objects used in demonstrations and illustrations.[52] Spurzheim, he concluded, 'was a very subordinate agent in the improvement of phrenology'.[53] R.R. Noel, a German phrenologist, provided similar evidence to reinforce his claim that Gall had been the sole discoverer and teacher of phrenology in the first decade of the nineteenth century.[54]

* * * *

Notwithstanding the truth of the matter, Spurzheim was wholly successful in establishing his version of events and his place as the founder and leading figure of the phrenological movement in Britain. French phrenologists, perhaps understandably, were quick to defend the recently-naturalised Gall against Spurzheim,[55] and Fossati translated and published Gall's Letter to Retzer to demonstrate Gall's role as founding father.[56] The Paris Phrenological Society expressed astonishment that Spurzheim had so easily and successfully insinuated himself into British

phrenological groups[57] a situation all the more worrying for the fact that only his *popular* phrenology was available to the population.[58] In Britain, and occasionally in the United States,[59] it was noticed by reviewers as well as by phrenologists close to Spurzheim that he had adopted an illegitimate role[60] and that this had resulted in a degraded form of Gall's organology being paraded as the real thing. 'Gall's name' Forbes noted, 'has tended to be tarnished by his followers'[61] - a state of affairs James Hunt conjectured must have had Gall writhing in his grave.[62]

Gall, one imagines, would have been more concerned that none of his major works were translated into English - or, when they finally appeared in the American 'Phrenological Library', they were unavailable in Britain.[63] Some efforts were made to produce a version of the Fonctions du cerveau in a cheap and accessible form for the home market, but these, significantly, came to nothing.[64] The early volumes of the Phrenological Journal do summarize aspects of Gall's teachings - indeed, one can see that the first two volumes had been drawn largely from that source,[65] but no serious study appears throughout its twenty-four year run. By early 1825, the Journal was already raising doubts as to whether Spurzheim should cede place to anyone in the phrenological of thinkers;[66] Spurzheim's control had already taken hold. So in 1840, John Elliotson could lament that 'very few in the country have studied Gall. I am not acquainted with six

persons whose native tongue is English, even among writers and lecturers on phrenology, who have not learnt phrenology second-hand from Dr. S., or third-hand from Mr. Combe's writings, since these are in English, and comparatively short, while Gall's are in French, and of great extent'.[67] 'The science (Gall) left in its infancy', wrote Engledue, 'but where are the Cerebral Physiologists who have studied his writings? It is a crying shame that we are not more intimately acquainted with Gall.'[68] Even in 1869, Prideaux looked back to see that Gall's tomes had been unread; his contribution to knowledge had remained a 'sealed book' throughout the land.[69]

Spurzheim's influence was great, yet the dominance of his own version of practical phrenology and the stifling of Gall's system was ensured through the agency of George Combe in Edinburgh and the Edinburgh Phrenological Society. Combe's interest in phrenology was stirred, perversely, by the invective in Gordon's review and the news that Spurzheim had landed in the Scottish capital to defend himself. He had some residual interest in anatomy and physiology - derived both from Gordon's work and from the anatomical lectures which he attended of another critic of phrenology, John Barclay[70] - but only after meeting Spurzheim and witnessing his demonstrations did he embark on a serious three-year study of the subject.[71] This involved very little investigation into the anatomy and physiology of the brain, however; by 1818, he felt it best to leave this aspect of Spurzheim's

work to his brother Andrew, then studying medicine in Paris.[72] George Combe, one can see, measured himself and phrenology not against the findings of Gall (he most probably never read the 1808 Memoir presented to the *Institut*),[73] but instead against his country's moral philosophers and faculty psychologists. He was well read in the writings of the Scottish Enlightenment thinkers,[74] and some of his very earliest articles endeavour to portray phrenology as a new and more exact version of the system proposed by Dugald Stewart.[75] Indeed, George Combe's most famous work, The Constitution of Man was later to be put forward as a 'modest attempt' to pursue the plan 'laid down by Hutcheson, Smith, Reid, Stewart, and Brown'.[76]

The efforts made by George Combe to give more precision to the notion of faculty at no time involved him in anchoring this term to that of physiological function or anatomical structure; the difference between Combe and Gall on this point is very sharp, as Dallenbach has shown.[77] Faculty is a term, or rather an entity, which Combe intends to defend on the ground that it can be seen by the bumps and depressions on the skull or even by a straightforward physiognomical diagnosis.

Faced with criticism of Spurzheim's theory,[78] 'Observator Craniorum' (as Combe titled himself) proposed that the truth of phrenology was something that hardly required debate in the pages of a journal as it was daily vali-

dated in the street, the lounge, and throughout the country, by simple mass observation of a physiognomical and pathognomical kind.[79] Facts of this nature, and facts alone, those collected by anyone able to see through the mists of Scottish rhetoric, are, according to Combe, the basis and the guarantee of the system.[80] 'Observe nature for yourselves', he counsels, 'and prove by your own repeated observations the truth and falsehood of phrenology'.[81] A tedious and rather banal injunction perhaps, but one we must find startling appearing as it does in the first, searching efforts Combe makes into phrenology. Even here, we can see, phrenology is not being defended as such; rather it is being upholstered and protected by the sheer *mass* of evidence provided by real or representational physiognomical portraits[82] and by the very number of investigators Combe would have out on the streets. 'The only point in the anatomy of the brain which is necessary to be understood before proceeding', Combe declared in his first ever phrenological article, 'is, that the brain is double, or consists of a right and left lobe, corresponding to, but independent of each other'.[83] And so he ventured out, Spurzheim's Outlines in one hand, a pen and paper in the other, to mark down the shapes and sizes he sees, to register in his Notebooks whether organs are 'small', 'moderate', 'large', 'firm' or just 'pretty fair'.[84]

Combe very soon felt able to declare himself a 'Spurzheimite',[85] and this meant not only that he accepted the

general categorization of the faculties offered by Spurzheim,[86] but also that his own books and articles in the Phrenological Journal quickly established the reign of a practical phrenology. By 'practical' was meant both that the system was to be founded on the ground of observations practically gathered and that once established it was to make its impression in every sphere of common life. 'Phrenology is either the most practical, useful of sciences', the Journal remarked, 'or it is not *true*'.[87] Practice here entails its verification and validation by empirical procedures alone;[88] but then it also entails the application of this truth in everything from raising children, to choosing a marriage partner, to selecting servants,[89] or, from the viewpoint of the 'educated public',[90] its truth lies in the areas of legislation, education, health, and penology.

II. Practical Phrenology and the Public

Practical phrenology as it was diffused through a mass of books, pamphlets, manuals, articles and reviews, lectures and addresses, and especially through the pages of its house journals, sought to intrude at all junctures into the hustle and bustle of daily life; to become, as George Combe phrased it, 'part of the practical business of society'[91] (see plates 15 and 16 for examples). 'This system of philosophy', he wrote, 'is fitted to throw light upon every subject in which human nature is

concerned'; so broad was it in scope that 'to point out the whole extent of its application would be to write a system of universal moral science'.[92] But, of course, to be taken up so widely the system had to be simple, memorable, and accessible. In his Outlines of Phrenology (1821), Combe felt he could dispense with the difficulties and pitfalls of contemporary physiological and anatomical theory to summarize the discipline in three basic points. First, the brain was the natural instrument of mind; next, that instrument was an aggregate of parts; lastly, its form fitted the cranium like a hand in a glove.[93]

Like Spurzheim and at the same time, Combe set off on his phrenological career by pursuing two distinct, if parallel, paths: along with the Essays in Phrenology (1819) which made a valiant effort to cover the more recondite scientific aspects of the system,[94] he issued popular works which all but denounced this approach. The Outlines and the Elements of Phrenology (1824) were written, their author said, for those wishing to gain an acquaintance with the subject but reluctant to expend time and effort in its pursuit.[95] Such texts formed the nucleus around which Combe and Spurzheim intended to build networks of practical phrenologists.

For the educated literate public the movement was concerned to pay especial attention to the problems of education, criminal legislation, religion, and moral

philosophy.[96] It stressed in addition that all the arts were developed according to phrenological principles and submitted the greatest literary figures to close scrutiny.[97] Popular novels were noticed as they appeared - those of Sir Walter Scott were a particular favourite[98] - and the Phrenological Journal seldom missed an opportunity to comment on paintings,[99] music and drama.[100] If the movement was to dodge direct conflict with its foremost scientific and professional critics, the same was not to be the case for the legions of hostile 'reviewers, verse makers, and novelists'.[101] For the working classes and the less cultured, the journal provided regular phrenological case studies of the famous and infamous drawn from the annals of popular consciousness. Phrenology, moreover, was a great improving science, ameliorating the condition of the poor, conferring education on the uninstructed, and reforming harsh criminal legislation.

When phrenological studies were not directly involved in the great social and moral issues of the day they sought to use art, literature, and music to raise the moral tone of their readership. 'Phrenology', Spurzheim wrote to Combe in 1820, 'must unite in every respect Science and Morality and in that manner produce a better condition of Mankind';[102] and this intention runs through almost all the productions of practical phrenology[103] before being finally codified in Combe's On the Relation between Religion and Science (1847), in which he sought

to found morality in Nature itself.[104] Without in any way wishing to oversimplify what is without doubt a complex set of issues, it must be said that this moralizing often takes on the crudest possible forms. By this, I mean less what phrenologists actually said about moral questions and the debates that took place within the movement, rather the almost limitless field of evidence which was cultivated by them. Novelists were plundered for moral homilies; tyrants, royalists, and democrats were painted with one of the thirty-five brushes available in the Spurzheimian paintbox in shades of one colour only (Byron had a large neck and was licentious; Voltaire lacked religious sentiment and his cranium was shaded accordingly, and so on). And proverbs and mottos were invoked to illustrate the morality or immorality of various cultures, tribes, and nations, a use of common discourse which recalls Lavater's own.[105] Readers all the while were encouraged to send to the editor their own observations of cranial differences, of what they saw and witnessed on their way to work, at home, amongst friends. George Combe himself felt it a kind of guarantee of the system to employ not his own observations, but the evidence compiled by other, more common, minds.[106]

What arrived from correspondents at the Edinburgh headquarters of the Phrenological Society must have struck the trained or professional members of the group as little more than crude physiognomical deductions flowing from the age-old association of head size and intellec-

tual capacity. Typical was the London hat-maker who wrote in of his experience fitting his handiwork to differing classes from various parts of the country.[107] But this was widely seen as a good indication, if not of the strength of the movement, at least of its extent. Practical phrenology may have lost some of its Germanic levity, yet the net gain was that it had become a 'fund of entertainment' for all to enjoy.[108] Even those still unacquainted with the baseline definition of the system were still, in a sense, *de facto* members. 'Everyone', the phrenologist H.D. Inglis wrote, 'is apt to connect intellect with an expanded forehead, and to consider a very contracted forehead, as indicative of a narrow capacity'; so, to a certain degree, he added, 'mankind are... phrenologists without knowing it'.[109]

One might be tempted to think these kinds of sentiments occur only in the most simple-minded productions pullulating on the sidelines of a genuinely rigorous discipline. And, it is true, one finds them most explicitly in pamphlets with titles like Phrenology Simplified, A Catechism of Phrenology, and Phrenology Made Easy, in shilling-an-issue vulgarizations which never pretended to be anything other.[110] Still, it remains something of a surprise to find the pages of the Phrenological Journal matching cheap physiognomical sketches alongside more serious extracts and reviews, particularly when its editor had admonished his colleague in charge of the Phrenological Almanac for tending to 'revive the trade

of the antiphrenological scoffer on a fresh capital'.[111] The Almanac had gone one step further along the path stalked out by its Edinburgh predecessor, matching as it did sketches with ink pen portraits, crude caricatures, and a naive kind of physiognomical prognostication embodied in calenders of dates and events. As the Almanac put it, 'phrenology advances if not as a science, at any rate as a creed'.[112] Later, the Zoist was to brand the Journal as indecisive and weak, and the Almanac silly and vulgar: it, too, nonetheless, launched itself on a very similar package of detailed studies and 'single-glance' character analyses.[113]

Knowing the subsequent development of the movement in this aspect, it becomes less difficult to see how much it was pre-figured in Combe's own writings. Nothing seems to us to capture the populist ambition of Combe better than a remark of his at the very opening of his phrenological career. He writes:

> 'In other sciences it is necessary to study the principles and practice the rules before either the nature or utility of them can be understood. In phrenology, the most *ignorant* is the best judge of its merits. He who knows neither the principles nor the facts is a better judge of the truth and importance of the science than those who have studied the one and observed the other....
>
> It is a common notion that *Phrenology advances with the progress of public opinion as to its truth.*'[114]

Such public opinion expressed itself in a number of ways.

In one respect, one can find evidence of crude physiog-

nomical examinations being carried out assiduously by the readers of the Journal. One correspondent wrote in to say that 'observing peculiarities of development, and tracing the varied natural language and outward manifestations of the predominant faculties in the looks, gestures, speech, and conduct of those with whom he may come into contact... is one of the most delightful and instructive occupations a phrenologist can have...his most desirable travelling companion'.[115] This sense of the fun of a phrenology daily practiced we have already encountered. There were, too, bands of what Samuel Solly labelled 'bump readers',[116] and Sir John Forbes lambasted as 'those miserable caricatures' and 'half-formed enthusiasts' who travelled the length and the breadth of the country manning stalls at country fairs, street markets, and seaside resorts.[117] These were, as we might expect, attacked in the pages of the phrenological movement's publications for bringing the movement into disrepute. In addition, they were singled out for further censure for two reasons - reasons which themselves illustrate how narrow was the gap between populist phrenology, which was deemed acceptable, and unrestrained popular 'bumpology' which was not.

Those fears that widespread use could expose everyone's secrets that we saw greeting the arrival of Lavater's Essays on Physiognomy into Britain surfaced again as phrenology was establishing itself. No facets of personal life could anymore be hidden from its powerful gaze. For

Sir George Mackenzie[118] and John Barclay,[119] there were great dangers involved in letting phrenologists loose on the streets to examine heads and faces at will, without control, for amusement. To the radical Charles Bray, however, as he looked back over the development of the movement, this aspect was one of phrenology's great assets: not only did it cut through the waffle of the men of science and metaphysics, it also unmasked all imposters. 'No man appears to a disciple of Gall', he wrote, 'other than he is; and he is utterly repulsive to some men of high scientific and social position... because a very small brain and limited intellectual capacity are quite compatible with high scientific and social position'.[120] A satirical account of Combe's Essays on Phrenology caught, as satire must, a thick layer of popular resentment when it commented:

> 'Adepts as we are now in the art we never spend a single hour, without having it in our power to make the most interesting philosophical observations; and we cannot step into a stage-coach or a steam-boat, without witnessing experiments much more curious and entertaining than any the chemist can show in his laboratory. Another advantage that we have derived from our favourite science is, that wherever we are, we never now feel ourselves as among strangers, but have as intimate an acquaintance with every individual the moment we see the knobs on his skull, as if he carried about with him a window on his breast.'[121]

The 'window on his breast', whilst it exposed some secrets which the gentlemanly classes thought better left in the dark, was of assistance in singling out the more nefarious members of society - morals, indeed, did lie in

bumps:

'For burglars, thieves and co.,
Indeed I'm no apologist,
But I, some years ago,
Assisted a Phrenologist.

Observe his various bumps,
His head as I uncover it:
His morals lie in lumps
All round about and over it.'[122]

Whilst few concerned themselves with the right to privacy of burglars, thieves, and co., the Phrenological Journal did raise the issue as it affected their betters. One correspondent inveighed against the 'practice of examining heads, not of well-chosen cases... but indiscriminately', and Lord Jeffrey and John Gordon's famous doggerel poked fun at the notion that a perfunctory glance at pretentiously-named phrenological faculties could help make the decision of a lifetime:

"'Tis well to know, before you wed a wife,
Whether she'll love her children as her life,
Or, if she's un-phi-lo-pro-gen-i-tive,
Not care a pin whether they die or live!...

Is it not well, before we choose a wife,
Or choose a husband, partner for our life,
To know what faculties are sound and right,
What intellectual organs clear and bright."[123]

A rule of thumb was to make the distinction at all times between the rich and the poor, the common and the uncommon, the respectable and the degenerate: 'EXAMINE NO HEADS OF LIVING INDIVIDUALS OF RESPECTABLE STANDING'.[124] This left a large chunk of the Victorian world *terra incognita*, and gave added impetus to the search for

subjects in historical records, art galleries, and music halls. It led also to an emphasis on those exceptional individuals at the highest and lowest reaches of the scale of human endowment: the particularly gifted and the pronounced reprobates.

Because the observation of faculties developed normally is difficult to achieve, it was judged best to begin with 'decided characters'. Only with practice, Combe writes, will the observer be able to progress onto the general population.[125] Characters which are especially treasured as subjects are those in which one, or perhaps a couple, of faculties are abnormally pronounced and in which the mind is squeezed into narrow channels of excess or continence. Such men and women are geniuses and to these Combe is drawn as a moth to the flame.[126] Geniuses exhibit merely the development of particular facets of their mental make-up rather than general intellectual superiority - in this respect, the greatest man is 'substantially the same being as the dullest mortal'.[127] But this early stress left the phrenologists open to the charge that their findings were only applicable to the narrow range of the human species, an exceptional one at that, and could not be extrapolated; 'the general population', it was often felt, 'could not be the subject of such decisive observations'.[128]

Such initial objections were without doubt influential in propelling phrenologists to cast their nets wider to

capture more supporters and more subjects. Yet the reason why extreme developments were so attractive in the first instance was that they were so easily discerned. The broadening of the evidential domain clearly required new standards of accuracy and detail in measurement. So the separation of the 'serious' and the 'infamous' practitioners in the thirties and forties takes the form of a distinction between those who carry out careful and minute examinations and those for whom a snatched glance is enough.[129]

This scale of accuracy in observation makes phrenology an empirical science of course, but also an *estimative* rather than an *exact* one;[130] one closer to geology and medicine than to mathematics or physical astronomy.[131] In 1819, Combe had suggested that whereas the 'transient glance of a passing observer' could not unravel the 'complex web of human affections, or the secret and torturous recesses of the human heart', it could still penetrate beyond the facades and masks worn by individuals to their innate capacities.[132] Five years later, he suggested that a more exact description of the size of cranial developments might be necessary. But although he offered a scale of nine terms (from 'very small' to 'very large'), he rejected a more complex classification based on twenty distinctions.[133] By 1826, there are already doubts being raised in the Phrenological Journal that as people naturally differ in their powers of perception, such measurements may well be inadequate in

principle: a better standard is required if observation and practice are to be of use.[134] The problem at this stage is both to set this standard and have it accepted across the phrenological community,[135] and to develop a means to accurately distinguish between one cerebral organ and the next, that is, to rigorously mark out cranial boundaries.[136]

The problem is resolved by the introduction of various instruments designed to give an accurate measurement of the development of the cerebral organs - devices ranging in complexity from the basic two-pronged caliper, through more elaborate versions with three-dimensional adjustments, to inventions such as Herbert Spencer's 'cephalograph' - good ideas used by no one.[137] With better accuracy, Combe felt that whilst phrenology was an estimative science it remained steadfastly non-speculative.[138]

* * * *

To gain a fuller and deeper understanding of some of the themes of phrenology which we have discussed above, it will be useful to describe briefly the growth and development of the movement in Britain. The Edinburgh Phrenological Society was founded in 1820 and began to issue Transactions three years later; though the Society registered an early growth based on Spurzheim's lectures and the popularity of Combe's Elements of Phrenology (which sold 1,500 copies in 10 months), the first volume

of papers had a limited circulation and no further volumes were issued.[139] The Phrenological Journal began to appear in 1824 with the confident backing of William Scott, James Simpson, Dr Richard Poole and George Combe and with the pledge to present orthodox phrenology and settle accounts with those 'pseudo-phrenological writers who attempt to pervert the science by a contrary course'[140] - an aim which we have seen was fulfilled with studies of Gall and detailed accounts of moral philosophy and particular faculties in the early volumes. However, the circulation of the Journal never matched the expectations of its editors for, as Combe wrote, early subscribers were attracted by 'the sheer love of novelty and the expectation of wonders but fell away weary of the Journal's repetition and failure to "apply phrenology"'.[141] This was, in fact, a common criticism levelled against the first volumes of the Journal.[142] By 1830, it was noted that the level of professional support and the status of phrenology as a science was lower than it had ever been.[143] Only after some changes in the format and content of the journal and the character of the works issued by Combe and Spurzheim was the movement to establish itself in societies throughout the country and to begin increasing the circulation of the Journal.

Combe's Constitution of Man certainly played a central role in spreading the doctrine amongst the working class;[144] Richard Cobden, free trade advocate, was a supporter and friend of Combe's;[145] G.J. Holyoake, father of the co-

operative movement, served as his unpaid assistant when Combe lectured in Birmingham in 1838.[146] Phrenology was also popular in literary circles, amongst figures like Spencer,[147] Martineau,[148] Chambers,[149] George Eliot,[150] and Balzac.[151] Just as kings, queens and emperors had been intrigued by Lavater's work, so too the British monarchy were attracted to phrenology; Queen Victoria and Prince Albert twice invited Combe to go to Buckingham Palace to read the heads of their children.[152] Alfred Russell Wallace, a lifetime supporter of phrenology, later reported that the Constitution of Man had sold 50,000 copies between 1835 and 1838 and that in 1843 it was still being purchased at the rate of 2,500 copies a year. By the end of the nineteenth-century, it had sold over 100,000 copies, compared with, say, the Origin of Species which reached only half that figure.[153] One important reason for these enormous sales was that, as a result of the Henderson bequest, the cost of the work was reduced from six shillings to one shilling and sixpence and this placed it within the reach of the barest pockets.[154] As Harriet Martineau wrote, 'thousands of intelligent mechanics, and fathers of families in the middle-classes would say, if asked, that the greatest event in the life of their minds was the getting hold of (The Constitution of Man).[155] 'It was seen', John Morley remembered, in a phrase strongly reminiscent of that applied to the initial popularity of the Essays on Physiognomy, 'on the shelves where there was nothing else save the Bible and Pilgrim's Progress'.[156]

By 1836, it was reported that thirty Phrenological Societies had been created, 64,000 copies of phrenological works had been sold, and over 15,000 plaster heads and bust casts had been purchased by people from all walks of life.[157] The sales of the Phrenological Journal had, moreover, been rising steadily since 1832, and after a change in format which made it more accessible with shorter reviews, more notes and briefer pieces of characterology, were given a further boost.[158] From a circulation figure of about 350 per issue in 1832, the sales had risen to about 600 six years later, which implied a readership of something of the order of three thousand.[159]

By 1837, George Combe was confident enough of his position to put himself forward as a candidate for the Chair of Logic at the University of Edinburgh and was able to back his application up with a list of testimonials from about 40 emminent persons.[160] When the votes were tallied, Combe came last in a list of four (his old anti-phrenological enemy Sir William Hamilton romped home) and decided to devote himself to full-time lecturing and writing on a large private income he had been bestowed.[161] A lectureship established at the Andersonian University, Glasgow, failed to attract more than a handful of students and was withdrawn after two sessions.[162]

These setbacks did not impede the growth of the movement amongst that 'large body of the public attached to

no exclusive branch, and biased by no especial prejudice',[163] and by 1837, it was said that 92 societies existed in England, Scotland and Ireland. Combe, indeed, was inundated with requests to lecture - a fact he attributed to the popularity of the Constitution of Man - and after four years on the circuit his confidence reached a new (rhetorical) peak. 'Look at Phrenology in France, in Britain, and in the United States', he told his audience, 'it already directs lunatic asylums, it presides over education, it mitigates the severity of the criminal law, it assuages religious animosity, it guides the historian, it is a beacon-light to the physiologist, and already has incorporated its nomenclature with the language of those countries'.[164] Through popularizations, lectures, manuals, and charts, practical phrenology had - so its spokesmen asserted - established itself powerfully amongst the working-classes,[165] and the middle-classes.[166]

* * * *

By the late 1830s, the impact of phrenological ideas of one form or another, 'pure' or 'perverted', was at its greatest; if it had died after 1803 or 1815 as a result of criticism, wrote one reviewer, it had been resurrected again in a stronger form.[167] As a result of its many forms and areas of application, it was now, wrote another, almost impervious to attack from without.[168] From within, however, serious pockets of dissi-

dence had begun to form, centred mainly around the London Phrenological Society (LPS), and these questioned the nature of phrenology as it had developed, particularly its populist appeal, and traced the degeneration back to an unwillingness to accept Gall as the inspirational father of the doctrine. More explosively still, a strong element argued that Gall, and hence phrenology itself, was materialist in inspiration and that the movement as a whole should therefore declare itself solidly against idealism and religious obscurantism.

At the heart of this counter-current lay the claim, vigorously defended by John Elliotson, founder and leading figure in the LPS, Dean of the Medical Faculty in the University of London, and President of the Royal Medical and Chirurgical Society, that phrenology had been degraded by its abandonment of Gall's teachings in favour of the populist phrenology of Spurzheim and Combe. Elliotson had complained to Combe in 1828 to warn against the drift he saw occurring[169] and maintained that Spurzheim was never more than a poor (and disloyal) pupil of Gall's.[170] He had soon persuaded the LPS of this view,[171] and as a consequence the London organizers extended an invitation to Gall to visit the capital. This Gall did in 1823, but he left disappointed with the extent to which his work had been established in Britain.[172] Though relations between the Edinburgh and London groups remained amicable through the 1820s, Combe was critical of the state and direction of phrenology in the English

capital when he arrived there in the spring of 1824;[173] Spurzheim, likewise, decided that the disputes within the LPS ensured that if phrenology was ever to establish itself it would be from Edinburgh only.[174] At this stage, as Giustino rightly points out, the differences within the LPS revolved around various personality clashes and claims to sole leadership; the heresy only grew from these schisms a decade or so later.[175] By the 1830s there were few reports of the LPS's activities reported in the Phrenological Journal; indeed, it had fissured into various competing and antagonistic groups: one headed by Elliotson, another meeting elsewhere, an Anthropological Society founded by John Epps in 1836, and another group based around activities at the Social Institution.[176] A Phrenological Association was formed in 1838 with the aim of attending annual meetings of the British Association; it succeeded only in holding seminars after those of the BA and though chaired by Combe was another nucleus of dissent.[177]

In 1840, George Mackenzie went to London to investigate the status of phrenology there and found it 'languishing';[178] it was useless, he thought, to think it might ever recover, London would never be the site of a 'useful' kind of phrenology.[179] The absence of a grouping of committed 'practical phrenologists' was cited by the Phrenological Journal as the reason why the LPS had dwindled into a 'little Tea-and-Coffee coterie, meeting at the house of Dr. Elliotson'.[180] An exaggeration no

doubt, and based probably on Watson's Statistics of Phrenology which also underestimated the membership of the group,[181] and its activity,[182] but it spoke of the strong sense in Edinburgh (and many other Northern sections) that the opposition to the changes of doctrine made by Spurzheim and Combe caused the splits and conflicts within the movement as a whole. The London representative referred to his members as 'disciples of Gall',[183] a deliberately provocative assertion designed to stress their adherence to a phrenology defined as the physiology of the brain, the investigation of the faculties of mind.[184] Combe never forgot this implicit slur on his reputation and work.[185]

The hegemony of the Edinburgh Phrenological Society was little helped by the activities and criticisms coming from Paris. We have seen that Gall rather than Spurzheim was the figurehead of the leaders of the French phrenologists and this was emphasized in a communication Combe received from them in 1836: phrenology was and was to remain, they stated, no more than the physiology of the brain.[186] Vimont openly attacked the Edinburgh leadership for refusing to include anatomical and physiological labours in their works;[187] Fossati's similar remarks were deemed 'pure *twaddle*' by the Phrenological Journal.[188] The LPS was well aware of their affinities with the French and maintained close links - a situation markedly at odds with the attitude adopted by the Phrenological Journal which only occasionally noted their activities.[189]

The breach in the movement finally occurred when many supporters switched allegiance to Elliotson's The Zoist in 1843; more dramatically, perhaps, large numbers of phrenologists resigned from the Phrenological Association as a result of Engledue's 1842 Address which came out clearly in favour of materialism. Engledue complained that for too long phrenologists had striven to 'make our views and opinions doctrinal with those now current in society'.[190] The real phrenologist, or as he termed him, the 'cerebral physiologist', is one who 'after deciding certain principles for his guidance, boldly follows them out, and fears not the result, however it may interfere with received opinions, and established dogmas'.[191] The central principle he then set out was that mind had no existence and was quite unprovable; it had, moreover, a tendency only to mystify and perplex.[192] To add fuel to the fire, Engledue then went on to suggest that many events previously explainable by recourse to a spiritual essence were more properly subject to investigations along the paths set by mesmeric study. The response was immediate: some believed the issue of materialism had been settled 17 years previously by Combe's article,[193] others denounced the address as inflammatory and dangerous.[194] Only one phrenologist in Edinburgh supported Engledue.[195] Mackenzie, Deville (who had come into conflict with Elliotson before, largely for personal reasons),[196] and Andrew Combe quickly resigned with the intention (never fulfilled) of setting up another association 'from which the introduction of Materialism,

Mesmerism, and that worst of isms Cliqueism, shall be excluded by a specific rule'.[197]

Sixty-six prominent members expressed their disgust with Engledue's views but decided to fight on,[198] but the struggle they quickly realized was pointless, and many (including George Combe) soon left.[199] The Phrenological Almanac came out strongly against Engledue and the London grouping: 'phrenological science', it said, 'has received a blow, from the effects of which it will take at least one generation, if not much longer, to recover'.[200] The problem the Almanac later made clear was that Edinburgh had failed to impose sufficient controls over its southern colleagues.[201] For a short while the controversy actually attracted more people than it repelled into the Phrenological Association,[202] but it shrunk after Combe took 25 members away in 1843. Three years later the LPS expired - the result, the Phrenological Journal taciturnly put it, of 'the undue ascendency of part-spirit'.[203] The circulation of the journal itself fell after the schisms and defections in the early 1840s,[204] and ceased altogether after 1847.[205]

The Phrenological Journal had, the Zoist claimed with evident delight, lost the energy, ability and earnestness of youth: 'a regard for truth necessitates us to say that it has not fallen before it deserved'.[206] For a short period, the Zoist provided a new medium for the publication of articles and reviews in 'cerebral physio-

logy', defending its materialist views vigorously[207] and associating Gall's name with the doctrine.[208] Its first issues certainly appeared promising: the very earliest number attacked what it called the 'lecture mania', questioning whether 'the great cause of truth is advanced by performing experiments in public - experiments, in our opinion, much more suited for the quiet retirement of the philosophical study than the bustle and turmoil of a public lecture room',[209] and blaming the populist drive of the Edinburgh phrenologists for the demise of the movement and the theory itself.[210] 'Phrenology', Elliotson wrote, 'has been put back 30 years by the Edinburgh phrenologists... Through the kind of converts whom they made, the race of phrenologists in Great Britain have (sic) been led into groundless opinions, and, as is now growing evident, phrenology is being cast off by those who learnt it from Dr. Spurzheim and the Edinburgh School'.[211]

III. Organology, Phrenology and Physiognomy

Having dealt in this chapter and the last two with the development of physiognomy and phrenology in England in the first decades of the nineteenth century, some links between the two should already be apparent. Nonetheless, before concluding it will be useful to briefly explore how Gall and then Spurzheim perceived their relations with physiognomy and pathognomy.

In the early sketch of his system, the Letter to Retzer, Gall had declared that his forthcoming labours would concern a detailed treatment of the prevailing characterology of the day, physiognomy. Indeed, acknowledging the power, influence and merits of Lavater's work, Gall foresaw that he would be able to prove that he was 'nothing less than a physiognomist'.[212] Looking at the Fonctions du cerveau, we can certainly find a number of passing allusions and some references to Lavater's text in the earlier volumes. Gall notes for example that many physiognomical signs remain embedded in the countenance, and further suggests that such fixed expressions would be of service in communication and survival amongst and between species.[213] He makes use of the physiognomical portraits of some well-known figures in just the manner of Lavater to trace the manifestation of psychological dispositions on the external appearance of face and body.[214] But clearly *what* Gall is looking for is different to Lavater. He is not searching for the expression of a soul, nor the unity of an albeit fissured character, but a particular, independent faculty. What then are we to make of Gall's allusions to Lavater's work?

This question has never received the serious attention of historians, though a number of suggestions have been made. Some have thought of phrenology as continuing and completing physiognomy;[215] others have thought of phrenology as a specialized form of physiognomy;[216] others still have found that the two doctrines are related as

twins;[217] and yet others have thought of Gall's work as a systematization of Lavater's loose generalizations.[218] Our exposition of Gall's work, particularly the demonstration that it possesses very few and insecure foundations in anatomical and physiological research, makes the link between Gall and Lavater far stronger than has previously been suggested; this, one may happily note, is a point made by some of Gall's British contemporaries who recognized the bases of his work in empirical observations.[219] The lecturer on phrenology was often depicted in contemporary prints relying on the work of Combe, Spurzheim, Gall and Lavater (see Plate 16).

Gall, of course, is concerned with forms and features only insofar as these denote the shape of the skull and hence the development of various organs in the brain. Facial features are, for the most part, irrelevant to his work, bodily features almost inevitably so.[220] We have seen, however, that if there is a breach between Gall's organology and Lavater's physiognomy, this cannot be said to occur as a result of the former's foundation in anatomical or experimental researches. even physiology plays a less important role in the Fonctions du cerveau, displaced as it is in the final volume by the call for widespread and far-reaching observations of the people by the people. Nevertheless, the fact that Gall still requires investigators to look for organs, for specific pre-determined cranial developments, gives them an aim and purpose Lavater himself never possessed. Phy-

siognomists, Gall notes, would *tend* to classify particular races into one grouping to find racial traits of character. This, as we have shown, is untrue and testifies to a failure on Gall's part to understand the importance of visual scrutiny in Lavater's programme. Still, it remains true that if this optic power is not developed, organology will expose differences in bodily appearance where physiognomy can perceive only generality. The body may well conceal what the cranium lays bare.[221]

Lavater did not dissolve character into separate and identifiable constituent elements, and as a result he is classed by Gall amongst the metaphysicians.[222] Gall judges that since Lavater failed to relate expression to organ, he allowed *any* sign to stand for any aspect of character. Consequently, 'Physiognomists have not yet established a single solid principle... All they have advanced amounts to mere *sensiblerie* and declamation.'[223] The same head will elicit different judgements from a group of physiognomists, Gall maintained, whilst different heads will elicit similar judgements; what is more important, the physiognomists themselves had no means to settle disputes amongst themselves. One reading was finally as good or as bad as any other. In contrast, even Gall's earliest physiognomical correlations made at school were 'not entirely accidental'.[224]

With these criticisms and assurances, Gall embarks on a physiognomical project of his own. Lavater, it will be

recalled, made a sharp and necessary distinction between physiognomy and pathognomy (the first inspecting the body 'at rest' to detect signs of permanent character, the second looking at the body 'in motion' for expressions of passing fancy, of passions, of the mind at work); this distinction was partly a practical one, and partly a means for Lavater to disassociate himself with the divinatory arts, that is, a means of founding his 'new science'. Gall's system of organology purports to provide the means to reach knowledge of the constituents of character at rest, but to seek out further dimensions he recognizes the need to assess gestures. Indeed, in Gall's text physiognomy is *collapsed* into pathognomy. Bodily features can give an indication of feelings and affections, a range of emotions restricted by the organization of the faculties. But like the number of faculties, the range of feelings is also universal. The universality and the limit of feelings in man provides the requirements for specificity lacking in Lavater.

When Gall referred to the contrast between the subtleties of the metaphysicians and the plain truths of common language, the object was to extend the range of his organology. Simple language should be the mode of discourse in the republic of organologists, but at the same time, it is also a proof that the range of real, unaffected emotions which are expressible is severely limited. Pathognomy is likewise a limited, universal language; more restricted still than verbal patterns of communica-

tion, but nonetheless equally fixed by natural law. This language is, Gall writes, the 'pantomime' of man and nature, the play of men revealing themselves in the theatre of the world. As the faculties can result in a wide range of mental combinations as a consequence of the interactions of the cerebral organs, so too bodily limbs together and in combination can produce a panoply of effects. It remains, nonetheless, that all humans think as they feel in the same manner - their pantomime is essentially the same.[225] Differences arise from various affections being mixed up rather than making their appearance in pure form; jealousy is commonly concentrated in anger, mixed with grief, and tinged with the lust for revenge. Physiognomical portraits so casually used by Lavater, by the very fact that we identify with them indicate that expressions are stable through history; that we understand the emotions portrayed in a Greek sculpture show their stability across cultures.[226] At the very instant at which feelings and ideas arise, 'they are written on the exterior in characters discernable by all the world'.[227]

Thus far, Gall has not shown that his pathognomy is based on stronger foundations than Lavater's physiognomy: the connection between inner and outer man is built solely upon the observation of consistent correlations. To establish pathognomy, Gall would have been required to demonstrate the link between the operations of particular faculties, or groupings of faculties, and

those of facial muscles say, or those of other limbs. But, as we might expect as Gall has all but abandoned the anatomical basis of his organology by the time he treats pathognomical expression, such a link is not established. Or to be more accurate, it *is* but only halfheartedly: organs sited low in the cranial mass will tend, Gall asserts, when activated to carry the head energetically downwards, those in the upper reaches will draw it heavenwards, those near the face will affect the mouth, the eyes, and the nose. From a solitary expression or muscle twitch one might be able then to follow a causal path backwards to reach the initiating organ.[228] Were such a chain of connections established, a rigorous basis for Gall's claim that the corporeal pantomime is natural, universal, and automatic could be sought.[229] But instead of attempting such a venture, Gall relies again on observation to package together organ, feeling, faculty, and expression.

The interest in Gall's passages on pathognomy are their strictly physiognomical content. Far from actually following through his intention of dealing with passing emotions, as the example of images of love shows, what Gall is referring to is the activity of organs, that is to instincts, faculties, and propensities, *not* to the modes in which such faculties can express themselves. When he speaks of wishing to reduce the language of pantomime to a simple alphabet, the letters he brings to mind are those of the elementary faculties,[230] the

sharpness of tone refers likewise to the strength with which these faculties are energized.[231] There is much work to be done in this respect, notes Gall, and it was premature of Lavater to have spoken of physiognomy. The child was baptized before it was born.[232] The obvious implication is that Gall's pathognomy is that child's rightful name, and he its father. That however was in 1824; Gall died before he could do more than sketch in outline the new physiognomy/pathognomy.[233]

This suggests a stronger set of links between physiognomy and organology than has commonly been supposed. Robert Young in an otherwise careful and considerate study of Gall and the history of cerebral localization has written, 'Gall proposed a study, *Pathognomy*, which was to replace physiognomy. It was perhaps his least fortunate idea and its "findings" go far beyond the most flagrant excesses of cranioscopy.'[234] The first part of this paragraph is correct, but it is wrong to judge pathognomy in any but the most anachronistic terms as 'unfortunate'; it was widely taken up, developed and extended in Britain in the nineteenth century, far more so, indeed, than was 'organology'.

Spurzheim and Combe, along with the other phrenologists were largely responsible for this development. Spurzheim, it is true, uses the term 'phrenology' rather than 'organology' or 'pathognomy' to describe his work - indeed, he made incorrect claims to having coined the term.[235]

But in the earliest English-language 'phrenological' texts, the new system is referred to as a 'physiognomy'. The implication is either that Spurzheim is intending to follow in the Lavaterian tradition, or that he wishes to extend Gall's remarks in the last volume of the Anatomie et physiologie. In fact, Spurzheim continues to use the term in later works, and in his Phrenology in Connexion with the Study of Physiognomy (1826) argues vigorously that the practical phrenologist must be both a physiognomist and a pathognomist.[236] Pathognomy is the second element in a knowledge of physiognomy; phrenology is a form of physiognomy which restricts itself to registering signs on the solid parts of the body, in particular those displayed on the skull.[237] The link to Gall's work, though perhaps evident, is strongly denied by Spurzheim for whom Gall deployed pathognomical evidence merely to confirm the seat of organs reached by other means.[238] Spurzheim finds himself much closer to Lavater whose enterprise is deemed 'scientific' even though flawed by a reliance on the unproved assumption of an inherent harmony or proportion between different parts of the body.[239] It can be seen that having defined faculties according to generalized impulses or actions, Spurzheim is quite naturally led to consider how those actions are registered in bodily expression and movement. This does not mean that an art of prognostication is being invoked, as some critics suggested,[240] but that while phrenology can guide one's knowledge of the seat and distribution of faculties, physiognomy and pathognomy

can provide evidence as to their power and potential to motivate individuals.[241]

External expressions provide an indication of the location of faculties as well as of their power: from pathognomy one can learn of the current activity of a faculty or group of faculties, from physiognomy of the extent to which this activity is habitual. Whilst Gall is given some credit for having stated that the motions and attitudes of the body will be modified according to the particular faculties at work, Lavater is ranked above him for his insight into the nature of bodily *deception*. Spurzheim takes seriously the notion that the truth of posture is often difficult to disentangle from convention and fashion. There exists a gulf between posture and posing, and bodily display occurs within that territory, always a compound of mind and of decorum, of truth and of 'gracification'.[242]

So practical phrenology is a rather complex procedure when joined to pathognomical and physiognomical studies. Alone, phrenology requires one simply to follow charts, guides, books, and casts and look for supportive evidence for their cranial maps and distributions. But to become practical in the sense of useful, employable, and effective it needs to become part of a set of pathognomical and physiognomical procedures which entail a developed awareness of the attitudes, language, discourse, and conventions of common society.[243] To be a practical

phrenologist for Spurzheim does not entail merely applying phrenology to the fields of legislation, education and penology but rather drawing those social realms into the very organism of phrenological practice. So, in a very real sense, the practical phrenologist needs to study law, and education, and legislation and a thousand and one other fields to train his *eyes*. 'Only those who have engaged in such studies, know how long the eyes must be exercised before they can detect every difference in form and sign at a glance'.[244]

Assuming an acquaintance with social conventions and laws, the practical phrenologist proceeds roughly as follows. Firstly, he or she (for women phrenologists were especially encouraged) must consider the general bodily constitution of the subject to gauge his or her temperament: is it sanguine, bilious, or nervous, or lymphatic? This may seem a study in temperament, but it really gives one clues about the past activity of cerebral organs once these have settled down to leave their physiognomical signs upon the body.[245] Secondly, the practical phrenologist carries out a general examination of the hard part of the body, particularly the head which is scanned to achieve a rough idea of the kind of head and mind on offer; simply, whether it is 'small, middling, or large-sized'.[246] Thirdly, he or she must look more carefully at the relative sizes of the various regions of the head to determine the general intellectual pattern, noting well the proportions of the feelings

to the intellect, the propensities to the sentiments, and so forth. Once this is done, the phrenological analysis can begin with a more thorough examination of the length and breadth of particular organs to establish their actual and proportionate sizes and developments.[247] And lastly, the examiner invokes a pathognomical analysis, the 'second element' in the character study, to see whether the phrenological assessment and physiognomical evidence is a true reflection of the innate capacity of the subject, or whether the hand of deceit is at play, and how, if at all, change and development can be suggested.[248] So, the notion of character is built up on five levels with some degree of architectonic hierarchy in operation, according to temperament and physiognomy; general order and general development of particular 'species' (to use Spurzheim's terms); organ manifestation; and bodily and facial expression. A combination of these offers limitless possibilities, but these Spurzheim believes are for the most part reducible to 42 basic 'character-types' which he sets out as a general guide for reference purposes.[249] In this case, the practice fits neatly around the theory as of course it needed to do if phrenology was to sustain its claim to being a truly popular and populist science.

Having examined in great detail the constitution and development of three early nineteenth-century discourses concerned with linking the appearance of (parts of) the body to character, I turn now, as explained in the sectional introduction, to a provisional conclusion which extends and deepens some of my overall claims.

NOTES: PART THREE, CHAPTER TEN

A Note on Abbreviations:

NLS: the National Library of Scotland, Edinburgh. I have used the George Combe Papers (NLS 7201-7515), including letters sent and received by George Combe, his lecture notes, journals, and notebooks. Presented to the National Library in 1950 by the Combe Trustees.

PJ: The Phrenological Journal and Miscellany, Edinburgh, 1823-37 (continued as) The Phrenological Journal and Magazine of Moral Science, London, 1837-40; Edinburgh, 1841-47.

TZ: The Zoist: A Journal of Cerebral Physiology & Mesmerism, and their Application to Human Welfare, London, 1843-56.

PA: The Phrenological Almanac; or Journal of Mental & Moral Science, ed. D.G. Gooder, Glasgow, 1842-6.

1. Anatomie et physiologie, II, 147n. This shows that Spurzheim's collaboration with Gall ceased at this point in the text.

2. Though it was frequently stated that Gall and Spurzheim parted on poor terms, I have been unable to discover what, if any, were the causes of the ill feeling. See David de Giustino, Conquest of Mind. Phrenology and Victorian Social Thought, 1975, 15; we shall return again to the important question of the differences between the two 'founders of phrenology', particularly to the issue of how Spurzheim saw his role in the early years in Vienna and during the tour through Germany.

3. See Spurzheim to Combe, 13 March 1821, NLS 7207, fo. 75.

4. See note 15 in chapter nine above for details of reviews in The Edinburgh Medical and Surgical Journal.

5. Thomas Brown, 'Review of Lettre de Charles Villers'.

6. For account, see Richard Chenevix, Phrenology Article of the Foreign Quarterly Review, with Notes from G. Spurzheim, 1830, 16 (Spurzheim's notes, which we shall refer to again, were also published separately in PJ, VI, 23, 1830, 304-19). The state of quackery in Britain at the turn of the century is dealt with in Eric Jameson, The Natural History of Quackery, 1961, and in contemporary works such as J. Corry, Detection of Quackery (1802) and F.B. Courtenay, Revelations of Quacks and Quackery (1885).

7. See 'Biography of the Author' by Nahum Capen in J.G. Spurzheim, Phrenology in Connexion with the Study of Physiognomy, 1836, 47. Charles Follen later wrote that Spurzheim's average audience in Bath, Bristol and Cork was about 40 (see his 'Funeral Oration...Boston...1832', PJ, VIII, 37, 1832, 317-31, 321).

8. John Gordon, 'Review of Anatomie et physiologie... and The Physiognomical System of DRS GALL and SPURZHEIM', Edinburgh Review, XXV, 49, 1815, 227-68, 227.

9. ibid., 228; a view later repeated by F. Lélut, who described England as 'the Eden of Phrenology' (Rejet de l'organologie phrénologique de Gall, et de ses successeurs, Paris, 1843, 217).

10. Gordon, 'Review', 229.

11. ibid., 227.

12. ibid., 268.

13. See S.S. Schweber, 'Scientists as Intellectuals: The Early Victorians', in James Paradis and Thomas Postlewait (eds), Victorian Science and Victorian Values: Literary Perspectives, New York, 1981, 1-37, 10.

14. 'Introductory Statement', PJ, I, 1, 1824, iv.

15. Walter Bagehot, 'The First Edinburgh Reviewers', Literary Studies, 2 vols, 1911, I, 1-35, 25.

16. Quoted in James A. Grieg, Francis Jeffrey of the Edinburgh Review, 1948, 60-1 (see 10-11 for estimate of circulation). As comparison, the Times in 1813 sold a paltry 8,000 copies daily. See also J.L. Clive, Scotch Reviewers: The Edinburgh Review, 1802-1815, (1957) for details of the rise in readership from a first issue of 750 copies in October 1802.

17. Letter from George Combe to F. Jeffrey, esq. in Answer to his Criticism of Phrenology, contained in No. LXXXVIII of the Edinburgh Review, Edinburgh, 1826, 2n; 'Introductory Statement', PJ, I, 1, 1824, v.

18. See review of Andrew Carmichael's A Memoir of the Life and Philosophy of Spurzheim in PJ, VIII, 36, 1834, 261-70, 263-4 and 'Dr Spurzheim and the Edinburgh Reviewer', PJ, IX, 46, 1836, 526-31, where the incident is recalled with great relish.

Spurzheim's own recollection occurs in a letter to Dr Biggar, 30 June 1816, NLS 7202, fo. 47.

19. See John Gordon, Observations on the Structure of the Brain, Comprising an Estimate of the Claims of Drs. Gall and Spurzheim to Discovery of the Anatomy of that Organ, Edinburgh, 1817, 25, 110-11. This text essentially constitutes a prolonged repetition of Gordon's earlier review but with the addition of criticisms taken from the Institut's report to the effect that even if Gall and Spurzheim did say something of importance it was nothing new (see, e.g. 180, 184).

20. See Capen, 'Biography', in Spurzheim, Phrenology in Connexion, 50.

21. Spurzheim quoted in Chenevix, Phrenology Article, 18.

22. For this claim and the editor's denial see the anonymous 'Dr Spurzheim, the Marquis Moscati, and the London Phrenological Society', PJ, VIII, 36, 1834, 227-44, 238; even Nahum Capen had to agree that Spurzheim's lectures in Paris were no match for Gall's ('Biography', in Spurzheim, Phrenology in Connexion, 61-62).

23. My information derives from the 'Notices, and Signs of the Times', in PJ, II, 7, 1825, 486-7 and the 'Notices', in PJ, III, 10, 1826, 324; IV, 14, 1827, 315-6; V, 17, 1829, 160-2; VI, 21, 1830, 161, 634; and VII, 28, 1831, 192. For an example of local reaction and organization, see Ian Inkster, 'A Phase in Middle Class Culture: Phrenology in Sheffield, 1824-1850', Transactions of the Hunter Archaeological Society, 10, 1979, 273-79.

24. Details of Spurzheim's career in America derive from John D. Davies, Phrenology, Fad and Science. A 19th-Century American Crusade, New Haven, 1955; Park Benjamin, 'The Late Dr Spurzheim', New England Magazine, IV, 1833, 40-7; anon., 'Spurzheim and Phrenology', Boston Medical and Surgical Journal, CLXXX, 1919, 167-8; and Robert E. Riegel, 'Early Phrenology in the United States', Medical Life, 37, 1930, 361-76. For Spurzheim's biography, apart from Nahum Capen (note 7 above), I have relied on Nahum Capen, Reminiscences of Dr. Spurzheim and George Combe, New York, 1881; Charles Follen, 'Death of Dr Spurzheim', PJ, VIII, 35, 1832, 129-43; and anon., 'Review', in PJ, VIII, 36, 1832, 261-70. A letter to George Combe, 13 March 1821, also gives details of Spurzheim's early career (NLS 7207, ff. 75-6). Lastly, Anthony A. Walsh's article is excellent: 'The American Tour of Dr. Spurzheim', Journal of the History of Medicine and Allied Sciences, XXVII, 1972, 187-205.

25. This number, and Spurzheim's further classification, became generally accepted in Britain (see, for instance, A. MacAlister, 'Phrenology', The Encyclopaedia Britannica, 13th ed., 28 vols, 1926, XXI, 534-41).

26. J.G. Spurzheim, Outlines of the Physiognomical System of Drs. Gall and Spurzheim: Indicating the Dispositions and Manifestations of the Mind, 1815, 105.

27. J.G. Spurzheim, Lectures on Phrenology, 1837 (a new edition, corrected), 20-5.

28. Spurzheim, Outlines of the Physiognomical System, 29-30.

29. Spurzheim quoted in Chenevix, Phrenology Article, 62.

30. J.G. Spurzheim, Essai philosophique sur la nature morale et intellectuelle de l'homme, Paris, 1820, 206-7.

31. Spurzheim to Combe, 19 May 1818, NLS 7203, fo. 108.

32. Some 55 pages of a slender 88 page text are given to anatomy alone.

33. Spurzheim, Outlines of the Physiognomical System, 5.

34. ibid., 56, 82-7.

35. ibid., 37.

36. See ibid., 22-4.

37. G. Spurzheim, Observations sur la folie, ou sur les dérangements des fonctions morales et intellectuelles de l'homme, Paris, 1818, V, 135 especially.

38. Great play is made on Spurzheim's popular 'Baconian' methodology in (Lord Jeffrey and John Gordon's), The Craniad: or, Spurzheim Illustrated. A Poem, in Two Parts, Edinburgh, 1817. It is Baconianism which has drawn such a wide audience to the phrenologists, and Baconianism which has allowed the phrenologists to allbut ignore expert witness.

39. See Spurzheim, Outlines of the Physiognomical System, 59.

40. See ibid., 60 and for the position nicely reiterated, G. Spurzheim, Observations sur la phraenologie ou la connaissance de l'homme moral et intellectuelle, fondée sur les fonctions du système nerveux, Paris, 1818, 82-7.

41. Spurzheim, Phrenology, I, 12ff.; Essai philosophique, 212. One can also note a significant terminological shift when reference is made to anatomical discoveries, from a 'we' in the opening pages of Observations sur la phraenologie in 1818 to an 'I' two years later in the Appendix to the Essai philosophique.

42. A role Spurzheim labelled as being that of 'associate', see, e.g., Spurzheim to Combe, n.d. (early 1821), NLS 7207, ff. 77-8.

43. Spurzheim, Outlines of the Physiognomical System, 7.

44. John Elliotson, Human Physiology. With Which is Incorporated, Much of the Elementary Part of the Institutiones Physiologicae of J.F. Blumenbach (5th ed.), 1840, 332.

45. He had, as we have noted, assumed single authorship of The Anatomy of the Brain. In this work he claims, in particular, to have discovered the fibrous nature of the white matter jointly with Gall (The Anatomy of the Brain with a General View of the Nervous System (2nd ed.), Boston, 1836, 95; see also xix and 148). Elliotson treats this episode in his Human Physiology, 330-35.

46. See Anatomie et physiologie, II, 251; III, xv; and the Preface to OFB, I. Elliotson, again, gives

much evidence on this score in his Human Physiology, 384-89.

47. See Elliotson, Human Physiology, 1149-53.

48. See John Elliotson, 'Address delivered to the London Phrenological Society...1827', PJ, V, 17, 1829, 70-82.

49. See Elliotson, Human Physiology, 1155; Hollander, In Search of the Soul, 342.

50. Elliotson, Human Physiology, 1154.

51. anon., Craniologie, ou découvertes nouvelles du Docteur F.J. Gall, concernant le cerveau, le crâne, et les organes, Paris, 1807, 32.

52. See Hollander, In Search of the Soul, 342.

53. See anon., 'Dr Spurzheim, the Marquis Moscati, and the London Phrenological Society', PJ, VIII, 36, 1834, 227-44, 238.

54. R.R. Noel, 'Reliques and Anecdotes of Dr. Gall', PJ, XVII, 79, 153-7.

55. See Joseph Vimont, Traité de phrénologie humaine et comparée, Paris, 1836, 2 vols, II, 52-54; and the evidence in anon., 'Journal de la Société Phrénologique de Paris', PJ, IX, 46, 1836, 505-15.

56. Originally published in French in Journal de la société phrénologique de Paris in April 1835, then reproduced in G.A.L. Fossati, Questions philosophiques, sociales et politiques, traitées d'après les principes de la physiologie du cer-

veau, Paris, 1869, 287-302.

57. See anon., 'Report to the President of the Phrenological Society, (Edinburgh), on the State of Phrenology in Italy', PJ, V, 18, 1829, 299-318, 304.

58. See Lélut, Qu'est-ce que la phrénologie?, 398.

59. See Amariah Brigham, An Inquiry Concerning the Function of the Brain, the Spinal Cord, and the Nerves, New York, 1840, esp. 129-30, 133-37; also the remarks from the American Phrenological Journal in Davies, Phrenology, 42-45.

60. See for instance, the Penny Cyclopaedia entry on Spurzheim (see 'Intelligence, & c.', PJ, XV, 72, 1842, 287); Forster's letter to John Elliotson in Elliotson, Human Physiology, 1157-59; and Andrew Boardman, 'Sketch of the Rise, Progress, and Present Condition, of Phrenology', in George Combe, Lectures on Phrenology (3rd ed.), New York, 1878, 76-7.

61. John Forbes, 'Review of Grundzüge einer neuen und wissenschaftlich begründenten Cranioscopie', The British and Foreign Medical Review, XIV, 1842, 65-80, 75.

62. James Hunt, 'On the Localisation of the Functions of the Brain, with Special Reference to the Faculty of Language', The Anthropological Review, VII, 1869, 201-14, 201.

63. See John Elliotson, 'Dr Elliotson on Gall', PJ, XI, 54, 1838, 64-5.

64. The efforts made are recounted by E.S. Symes in a letter 'To the Editors of the Zoist', TZ, IX, 36, 1852, 442-3, and by Elliotson in 'An Account of the Appearances after Haydon's Death, with Reflections upon Phrenology and Phrenologists', TZ, XII, 45, 1855, 62-74, 65-6.

65. See 'Note', PJ, II, 6, 1825, iii. On page iv we can again read of the intention of the Phrenological Journal to print parts of the Fonctions du cerveau in its pages; this plan, though occasionally carried out, was swiftly smothered under the weight of practical phrenologizing. The Boston edition of Gall's work was reviewed, but only briefly, and treated as a vague precursor, much rectified and improved by subsequent work (see 'The Phrenological Library', PJ, X, 51, 1837, 458-62; and another notice in PJ, XVII, 79, 1844, 207).

66. anon., 'Dr. Spurzheim's French Works', PJ, II, 6, 1825, 185-201, 186.

67. Elliotson, Human Physiology, 387.

68. W.C. Engledue, Introductory Address to the Phrenological Association, London, June 20, 1842, 1842, 3. This important lecture was widely distributed and appeared in the Medical Times and in the Phrenological Journal (as part of the 'Report of the Proceedings of the Phrenological Association, at its Fifth Annual Session, at London, in June 1842', PJ, XV, 73, 1842, 291-343).

69. T. Symes Prideaux, 'Gall's Organology', The Anthropological Review, VII, 1869, 76-92, 77.

70. See John Barclay, An Inquiry into the Opinion, Ancient and Modern, Concerning Life and Organisation, Edinburgh, 1822, section 18 which offers a gentle but still severe critique of Spurzheim's work.

71. See George Combe, On the Relation between Science and Religion (5th ed.), Edinburgh, 1872, 10.

72. George to Andrew Combe, May 1818 in Charles Gibbon, The Life of George Combe, I, 112-13; see also George Combe, The Life and Correspondance of Andrew Combe, M.D., Edinburgh 1850.

73. His personal copy, in the National Library of Scotland, is uncut.

74. See David de Giustino, Conquest of Mind. Phrenology and Victorian Social Thought, 1975, 37-8; and Gibbon, Life of George Combe, I, 94. De Giustino's work is a useful overview of George Combe's work, especially his Constitution of Man, but suffers amongst other things from a neglect of the work of Gall (see on this Philip Collins, 'The First Science of Mind', Times Literary Supplement, 25 April 1975, 455-56; and for a useful appraisal of this and other recent studies of phrenology, Roger Cooter, 'Phrenology: the Provocation of Progress', History of Science, 14, 1976, 213-34.

75. See George Combe's 'On the Philosophy of Dugald Stewart, Esq. and Comparison betwixt it and the System of Gall and Spurzheim', The Literary and Statistical Magazine for Scotland, (henceforth: TLSMS), III, ix, 1819, 34-51; 'On the Natural Dispositions of the Human Mind', ibid., III, x,

1819, 151-66; and 'Comparative Merits of the Mental Philosophy of the School of Reid and Stewart, and of the Phrenologists', PJ, X, 50, 1837, 301-37.

76. George Combe, The Constitution of Man Considered in Relation to External Objects, Edinburgh, 1828, xiii.

77. K.M. Dallenbach, 'The History and Derivation of the Word "Function" as a Systematic Term in Psychology', The American Journal of Psychology, XXVI, 4, 1915, 473-84.

78. anon., 'Remarks on Dr. Spurzheim's Theory', TLSMS, I, iv, 1817, 349-53 found it surprising that the organological system had established itself so widely even though it had 'not the smallest foundation in truth' (350); this clearly invited a rejoinder defending the organological theory but received instead one defending the physiognomical system.

79. George Combe, 'Remarks on Dr. Spurzheim's Theory', TLSMS, I, v, 1817, 1-6.

80. George Combe, 'Observations on the Physiognomical System of Drs Gall and Spurzheim', TLSMS, II, vii, 1818, 233-44 and 'On the Utility of the System of Gall and Spurzheim', ibid., II, viii, 1818, 345-63.

81. Quoted in Gibbon, Life of George Combe, I, 114.

82. See George Combe, 'On Phrenology', TLSMS, III, ix, 1819, 288-90.

83. George Combe, 'Explanation of the Physiognomical System of Drs Gall and Spurzheim', The Scots Magazine and Edinburgh Literary Miscellany, LXXIX, 1817, 243-50, 244-45.

84. George Combe, 1820-21 Notebook, NLS 7407, fo. 21.

85. See the recollections in George Combe's 'Practical Phrenology', PJ, I, 1, 1824, xx.

86. See George Combe, Essays on Phrenology; or an Inquiry into the Principles and Utility of the System of Drs Gall and Spurzheim, and into the Objections made against it, Edinburgh, 1819, 214-18, and passim. (There were slight changes made to Spurzheim's nomenclature in the third edition of Combe's System of Phrenology (Edinburgh, 1830) which remained in subsequent editions, but these were very minor.)

87. anon., 'Practical Phrenology', PJ, V, 19, 1829, 426-9, 426.

88. This aspect of practical phrenology was a major target in W.B. Carpenter's criticism: 'We consider', he wrote in 1846, 'that, in building up their system, the followers of Gall (sic) have been too disregardful of evidence supplied by other sources than observation of man' ('The Brain and its Physiology', in Nature and Man. Essays Scientific and Philosophical (1888), Farnborough, 1970, 159-63, 161).

89. anon., 'Practical Phrenology', PJ, III, 11, 1826, 410-19.

90. 'Introductory Statement', PJ, I, 1, 1824, iii;

'Recent Attacks on Phrenology', ibid., 24, 45. A reviewer in 1819 perceptively remarked that Combe failed to provide any evidence of his own to substantiate the system but instead allowed the public to decide upon the matter for himself (anon., 'Review of George Combe's Essays on Phrenology, TLSMS, III, xi, 1819, 433-45, esp. 445). As if to make the point, a reader quickly wrote in with his own proof, a 'Phrenological Account of the Musical Festival', TLSMS, III, xii, 1819, 380-2.

91. George Combe, Essays on Phrenology, 301.

92. ibid., 305-6.

93. G. Combe, Outlines of Phrenology (3rd ed.), Edinburgh, 1824, 4.

94. Combe's Essays on Phrenology deals with the objections of Gordon and those of P.M. Roget (Treatises on Physiology and Phrenology: from the Seventh Edition of the Encyclopaedia Britannica, 2 vols, Edinburgh, 1838), but predominantly by counterposing quotations from Spurzheim, Gall and others against extracts from both (see 52-94); the later exchange of letters between Combe and Roget (ibid., 377-87) is indecisive. Combe's Letter to F. Jeffrey, though purporting to deal with anatomical criticisms, actually ducks these, maintaining that they are not new (e.g. page 3).

95. G. Combe, The Elements of Phrenology (6th ed.), Edinburgh, 1845, Preface.

96. This is an area which I shall not deal with explicitly, and will refer to Combe's and Spurz-

heim's work only insofar as it sheds light on other topics more pertinent to my subject. Giustino, Conquest of Mind, provides good coverage of the major issues.

97. The anonymous Phrenology; in Relation to the Novel, the Criticism, and the Drama (1848) was a popular text; see also the anonymous, 'Application of Phrenology to Criticism', PJ, I, 1, 1824, 92-115 and II, 8, 1825, 626-41 for an early statement. Studies of Shakespearean figures often appeared in the pages of the Phrenological Journal and the earlier ones provoked much controversy (e.g. 'Shakspeare's (sic) Character of Iago', PJ, I, 2, 1824, 287-92; 'Shakspeare's Iago', PJ, I, 3, 1824, 402-22; 'On Tragedy, with Some Remarks on the Character of Hamlet', PJ, V, 20, 1829, 516-39; and 'Shakspeare's Othello', PJ, I, 4, 1824, 512-32).

98. anon., 'St. Ronan's Well' (PJ, I, 3, 1824, 442-54), 'Red-gauntlet', (PJ, I, 4, 1824, 532-4), 'Chronicles of the Canongate' (PJ, V, 18, 1829, 278-86), and 'Letters on Demonology and Witchcraft' (PJ, VII, 27, 1832, 1-14) are typical examples from the early volumes. See on this W.U. McDonald, 'Scottish Phrenologists and Scott's Novels', Notes and Queries, CCVII, 1962, 415-17.

99. anon., 'Phrenology Applied to Criticim in the Arts', PJ, II, 6, 1825, 201-6; Gibbon, Life of George Combe, II, 340. The importance of phrenology in early and mid-nineteenth century art and art criticism has been little studied; a well-documented beginning is provided in Mary Christine Cowling, The Conception and Interpretation of Character in Victorian Modern Life Art,

2 vols, Leeds University Ph.D., 1982. See also, Fiona Pearson, 'Phrenology and Sculpture 1820-1855', Leeds Art Calendar, 88, 1981, 14-23; and Terry Friedman, 'Samuel Jones Phrenologized', Leeds Art Calendar, 86, 1980, 20-28.

100. anon., 'Music... and Mr. Kalkbrenner', PJ, II, 5, 1825, 120-30. George Combe's Phrenology Applied to Painting and Sculpture (1855) was an important text consisting mainly of articles from PJ in 1844, 1846, and 1847. Here he spoke for all the practical phrenologists who liked - and were encouraged to dally in - fields far from their speciality. 'In relation to art', he said, 'I feel myself to stand in a position similar to that of the scientific chemist in reference to the brewer and baker. He may be unacquainted with the practical details of these trades, and nevertheless be able to explain the laws of fermentation which the brewer and baker must observe to succeed in their manipulation' (vi). The biographer of Gall, interestingly suggests that artists were the first to see merits in organology (OFB, I, 48-9).

101. Combe, Essays on Phrenology, 95.

102. Spurzheim to Combe, 20 December 1820, NLS 7205, fo. 156.

103. See A. Cameron Grant, 'Combe on Phrenology and Free Will: A Note on XIXth-Century Secularism' (Journal of the History of Ideas, XXVI, 1, 1965, 141-47, esp. 141), where Grant argues that in Combe's hands the physiology of Gall and Spurzheim becomes a moral science.

104. Combe's On the Relation between Religion and Science (Edinburgh, 1847) was a short statement which also appeared as chapter IX of the 1847 edition of The Constitution of Man; a fuller book-length version appears ten years later - the specific statement embedding morality in nature occurs on pages 71-2.

105. e.g. anon., 'Proverbs Illustrative of Phrenology',PJ, II, 8, 1825, 505-8; 'Phrenological Remarks on the Mottos of Armorial Bearings', PJ, V, 18, 1829, 205-10.

106. Combe, Essays on Phrenology, 265, 266-98.

107. anon., 'Size of Head, National and Provincial, Observed by an Experienced Hat-maker of London' (PJ, IV, 16, 1827, 539-52) and 'On the Size of Hats Used by the Different Classes of Society' (PJ, V, 18, 1829, 213-17).

108. See Forster, Sketch of the New Anatomy, 82ff.

109. H.D. Inglis, A Lecture upon the Truth, Reasonableness, and Utility, of the Doctrines of Phrenology... to which are added Observations, in reply to an Essay on Cranioscopy, by R.W. Hamilton (n.d., late 1820s?), 17.

110. Such works were almost invariably anonymous, e.g. Phrenology Simplified, being an Exposition of the Principles and Applications of Phrenology to the Practical Uses of Life (1836); A Catechism of Phrenology, Illustrative of the Principles of that Science (1836, 9th ed.); Phrenology Made Easy; or the Art of Studying Character in Relation to Love, Courtship, and Marriage,

showing the best Means of Cultivating Character, so as to arrive at early Wealth, Position and Happiness (1860s?).

111. anon., 'The Phrenological Almanac', PJ, XV, 70, 1842, 77-81, 80-1.

112. anon., 'Phrenological Intelligences, Facts, & c.', PA, V, 1846, 71.

113. anon., see 'The Declaration of Expediency', TZ, I, 2, 1844, 148-56.

114. G. Combe, 1819-20 Notebook, NLS 7406, fo. 72-3 (and this notwithstanding his earlier worry that phrenology could very easily become a 'wide field for quackery' (ibid., fo. 31).

115. anon., 'Practical Application of Phrenology on a Voyage', PJ, I, 2, 1824, 259-68, 259.

116. Solly remarks that having failed to do justice to the work of Spurzheim and Combe in the first edition of his work (xi), he can only do so by separating them off from those 'bump readers' who would usurp their names (338-9), Samuel Solly, The Human Brain: its Structure, Physiology and Diseases (2nd ed.), 1837.

117. Forbes, 'Review of Grundzüge', 69; see also ibid., 71 for a description of the 'shilling-a-head itinerants'.

118. G.S. Mackenzie, Illustrations of Phrenology, Edinburgh, 1820, 25, 27.

119. Barclay, An Inquiry into the Opinions, 380.

120. Charles Bray, 'The Physiology of the Brain', The Anthropological Review, VII, 1869, 268-79, 277. See also S. Shapin, 'Phrenological Knowledge and the Social Structure of Early Nineteenth-Century Edinburgh', Annals of Science, 32, 1975, 219-43, 242.

121. anon., 'Review of George Combe...', TLSMS, III, 1819, 433.

122. W.S. Gilbert quoted in Philip Collins, 'When Morals lay in Lumps', The Listener, 90, 2316, 16 August 1973, 213-15, 213.

123. Jeffrey and Gordon, The Craniad, 20, 73. Some critics, like Sir G.S. MacKenzie argued against simplistic physiognomical readings (see his Illustrations of Phrenology, Edinburgh, 1820, 25, 47), but these are in the minority and rarer, I believe, than G.N. Cantor appears to suggest (in his 'A Critique of Shapin's Social Interpretation of the Edinburgh Phrenology Debate', Annals of Science, 33, 1975, 245-56, 252).

124. anon., 'Phrenological Quacks', PJ, IX, 46, 1836, 517-9, 517.

125. Combe, Essays on Phrenology, xii-xiii.

126. George Combe, 'On Genius', TLSMS, III, xi, 1819, 225-37, 233. See also Combe's numerous entries in the early notebooks, e.g. 1818 Notebook (NLS 7405, fo. 1-5, 29), 1819-20 Notebook (NLS 7406, fo. 40-6, 50-3, 56-7, 59), 1820-21 Notebook (NLS 7407, fo. 42), 1821-26 Notebook (NLS 7408, passim.).

127. Combe, Essays on Phrenology, 351; 343-75 are devoted to the question of genius, defined as the capacity of following ideas with facility and vigour (page 350).

128. Francis Jeffrey quoted in Letter from George Combe, 71. Similar criticisms are to be found in Sir John Forbes's review 'On the Origin of the Moral Qualities...Medical Notes and Reflections', The British and Foreign Medical Review, IX, 1840, 190-215, 212.

129. See Francis Hedderly, Phrenology. Science of Mind, 1970, 125, who finds this opposition between Gall on the one hand and Combe, Spurzheim and their followers on the other; also F.J.V. Broussais, 'Lectures on Phrenology, Lecture Nineteen', The Lancet, 30, 1836, 923-4.

130. G. Combe, A System of Phrenology, 2 vols, Edinburgh (5th ed.), 1843, I, vii; Gibbon, Life of George Combe, I, 146; see also Andrew Combe, 'Remarks on the Article Cranioscopy, by Dr. Roget, in the Supplement to the Encyclopaedia Britannica', PJ, I, ii, 1824, 165, and G. Combe, On the Relation, 19.

131. See G. Combe, 'On the Nature of the Evidence by Which the Function of Different Parts of the Brain may be Established', PJ, X, 450, 1837, 556-66, 563.

132. Combe, Essays on Phrenology, 306.

133. G. Combe, Elements of Phrenology, Edinburgh, 1824, 178.

134. See anon., 'Questions to a Phrenologist, with Answers', PJ, III, 10, 1826, 213-7, 213-4.

135. See James Straton, 'Notes on the Ordinary Method of Estimating Cerebral Development' (TZ, VII, 25, 1850, 53-65, esp. 54) for a historical treatment.

136. 'M', 'On the Boundaries of the Cerebral Organs', TZ, VII, 28, 1850, 445-6.

137. See Combe, Elements of Phrenology, 180-1, 223; Vimont, Traité de phrénologie, II, 450; James Straton, 'An Account of the Living and Dead Brain of the late Mr. Benjamin Robert Haydon, Historical Painter', TZ, XII, 45, 1855, 40-52, 45; Herbert Spencer, An Autobiography, 2 vols, 1904, I, 297 and Appendix H, I, 540-43. Later, as photography came into being, it was also deployed to fix patterns of cranial development (see anon., 'Suggested Uses of Daguerrotype', PJ, XIX, 89, 1844, 378-9).

138. George Combe, The Constitution of Man Considered in Relation to External Objects, (2nd ed.), Edinburgh, 1835, 34.

139. Hewett C. Watson, Statistics of Phrenology: being a Sketch of the Progress and Present State of that Science in the British Isles, 1836, 15.

140. 'Introductory Statement', PJ, I, 1, 1824, xiii. There have been a number of useful studies of Edinburgh phrenology which have been consulted for what follows: G.N. Cantor, 'The Edinburgh Phrenology Debate: 1803-1828', Annals of Science,

32, 1975, 195-218; Shapin, 'Phrenological Knowledge and the Social Structure of Early Nineteenth-Century Edinburgh'; idem, 'The Politics of Observation: Cerebral Anatomy and Social Interests in the Edinburgh Phrenology Disputes', in R. Wallis (ed.), On the Margins of Science: The Social Construction of Rejected Knowledge, Sociological Review Monographs, 27, 1979, 139-78; idem, 'Homo Phrenologicus: Anthropological Perspectives on an Historical Problem', in B. Barnes and S. Shapin (eds.), Natural Order: Historical Studies of Scientific Culture, 1979, 41-71.

141. George Combe to J.L. Levison, 5 July 1829, NLS 7384, fo. 281.

142. C. Hewett Watson complained that the journal contained too many 'heavy articles' (quoted in Giustino, Conquest of Mind, 81).

143. See Gibbon, Life of George Combe, I, 233.

144. See Angus McLaren, 'Phrenology: Medium and Message', Journal of Modern History, 46, 1974, 86-97; T.M. Parssinen, 'Popular Science and Society: the Phrenology Movement in Early Victorian Britain', Journal of Social History, 8, 1974, 1-20, 1; Shapin, 'Phrenological Knowledge', 226-31; A. Cameron Grant, 'Combe on Phrenology and Free Will: A Note on XIXth-Century Secularism', Journal of the History of Ideas, XXVI, 1, 1965, 141-47; idem, 'New Light on an old View', Journal of the History of Ideas, XXIX, 2, 1968, 293-301.

145. See Parssinen, 'Popular Science'.

146. See G.J. Holyoake, Sixty Years in the Life of an Agitator, 2 vols, 1906, I, 65.

147. Spencer wrote three articles in the Zoist and was, as his Autobiography makes clear, a supporter of the doctrine (see Georbe B. Denton, 'The Early Psychological Theories of Herbert Spencer', American Journal of Psychology, XXXII, 1921, 5-15). There has been some debate, however, about whether George Combe was known to him, or influenced him through his writings, or whether the theoretical influence was mutual; most of the dispute turns on the educational theories. J.A. Lauwerys argues that no influence whatever existed ('Herbert Spencer and the Science Movement', in A.V. Judges (ed.), Pioneers of English Education, 1968, 168), but others are more generous and feasible, e.g. F.A. Cavenagh (ed.), Herbert Spencer on Education, Cambridge, 1932, 58-9) and Alan Price ('A Pioneer of Scientific Education. George Combe (1788-1858)', Educational Review (University of Birmingham), 12, 1959-60, 219-29).

148. See Henry George Atkinson and Harriet Martineau, Letters on the Laws of Man's Nature and Development, 1851.

149. See Robert Chambers, Vestiges of the Natural History of Creation (1844), Leicester, 1969. Chambers's use of phrenological argument in the text drew fierce censure from, amongst others, Adam Sedgwick (see Charles Coulston Gillispie, Genesis and Geology, New York, 1959, 165, 190).

150. George Eliot was acquainted with Combe and, of course, with G.H. Lewes who wrote extensively

on Gall, and made a serious study of phrenological texts and was a believer in the system. See J.W. Cross (ed.), George Eliot's Life as Related in her Letters and Journals, 3 vols, 1934, I, 78, 279. See also Maurice L. Johnson, 'George Eliot and George Combe', Westminster Review, CLXVI, 1906, 557-68; and Sally Shuttleworth, George Eliot and Nineteenth-Century Science: the Make-Belief of a Beginning, Cambridge, 1984.

151. See G.T. Clapton, 'Lavater, Gall et Baudelaire', Revue de littérature comparée, 13, 1933, 259-98, 429-56, esp. 260ff., 278ff.

152. See George to Andrew Combe, 2 May 1846, NLS 7381, fo. 14-15; George Combe to Sir James Clark, 23 June 1850, NLS 7381, fo. 111-12.

153. A.R. Wallace, The Wonderful Century: its Successes and Failures, 1898, 164. Wallace reports his reading of the Constitution of Man and his experience at the hands of a 'Professor of Phrenology' who read his character in his autobiography, My Life. A Record of Events and Opinions, 2 vols, 1905, I, 234, 257-62. For other details of the sales of the work, see Giustino, Conquest of Mind, 3, 60.

154. See 'Advert' in Constitution of man; and 'Bequest... for the Advancement of Phrenology', PJ, VII, 33, 1832, 655-7.

155. Quoted in McLaren, 'Phrenology', 95.

156. John Morley, The Life of Richard Cobden (9th ed.), 1903, 93; see also 120, 522 for description

of Cobden's relations with Combe and his role in the formation of the phrenological society in Manchester. Charles Bray, interestingly, also referred to the influence of Combe's most well-known work in similar terms, writing to its author that 'your Constitution of Man will take the place of the Bible' (Charles Bray to Combe, January 1 1850, NLS 7305, fo. 63).

157. Watson, Statistics, 218ff.

158. See 'Short Communication', PJ, X, 52, 1837, 614.

159. 'Circulation of the Phrenological Journal', PJ, XII, 60, 1839, 291-2.

160. See Testimonials on Behalf of George Combe, as a Candidate for the Chair of Logic in the University of Edinburgh (Edinburgh, 1836); Additional Testimonials on Behalf of George Combe, as a Candidate for the Chair of Logic in the University of Edinburgh (Edinburgh, 1836); Gibbon, Life of George Combe, I, 318-31; review of 'Testimonials on Behalf of George Combe and The Suppressed Documents', PJ, X, 48, 1837, 102-12 and 'Edinburgh Logic', PJ, X, 49, 1837, 218-35. For commentary, see Alastair Cameron Grant, 'George Combe and the 1836 Election for the Edinburgh University Chair of Logic', The Book of the Old Edinburgh Club, XXXII, 1966, 174-84.

161. See Steven Shapin, '"Nibbling at the Teats of Science": Edinburgh and the Diffusion of Science in the 1830s', in Ian Inkster and Jack Morrell (eds.), Metropolis and Province. Science in British Culture, 1750-1850, 1983, 151-78.

162. This despite the fact that it was taken by Dr Andrew Combe and was eminently more serious in tone than his brother's (even though George promised not to refer to the Constitution of Man in his lectures in Edinburgh), as is clear from Andrew's Phrenology - its Nature and Uses: an Address to the Students of Anderson's University (Edinburgh, 1846). See also 'Andrew Combe's Address to the Andersonian University', PJ, XIX, 87, 1846, 97-120 for details. There was at some stage the suggestion that Spurzheim had obtained a lectureship in Cambridge in 1826 (this is reported in L.-F. Lélut, La Phrénologie, son histoire, ses systèmes et sa condamnation, Paris (2nd ed.), 1858, 192 and repeated in Lanteri-Laura, Histoire, 165, but this was not the case. Spurzheim was granted the use of one of the University's public-lecture rooms by the Vice-Chancellor, but no more (see 'Notices', PJ, IV, 13, 1827, 158-9).

163. See 'On the Progressive Diffusion of Phrenology', PJ, X, 50, 1837, 346-52, 351.

164. G. Combe, 'Address delivered at the Anniversary Celebration of the Birth of Dr. Spurzheim.... 1839', PJ, XV, 72, 1842, 193-213, 210.

165. See Gibbon who reports Combe's remarks about the popularity of his lectures in Mechanics Institutes (Life of George Combe, I, 300, II, 101ff.). Lady Eastlake is quoted as noting that phrenology only appealed to 'men who dropped their h's' (in Collins, 'When Morals lay in Lumps', 213).

166. See 'On the Progressive Diffusion of Phrenology',

PJ, X, 51, 1837, 400-13, esp. 409.

167. Forbes, 'On the Origin', 191-93.

168. Henry Holland, Medical Notes and Reflections, 1839, 506-11 (also in idem, Chapters on Mental Physiology, 1852, 192-9). See also R.W. Hamilton, An Essay on Cranioscopy, 1826, 73; W. Lawrence, Lectures on Physiology, Zoology, and the Natural History of Man, 1819, 237-8, which stress the need to open up phrenology to other, more varied, kinds of evidence.

169. See Elliotson to Combe, 4 March 1828, NLS 7384, fo. 87, 9 June 1828, NLS 7384, fo. 102; Elliotson to Combe, 25 July 1829, NLS 7223, fo. 109-10; Combe to Elliotson, 12 July 1829, NLS 7377, fo. 103.

170. John Elliotson, 'Address delivered to the London Phrenological Society...1827', PJ, V, 17, 1829, 70-82. On Elliotson, see Harley Williams, 'John Elliotson (1791-1868), his Triumph and Defeat' in his Doctors Differ. Five Studies in Contrast, 1946, 23-91.

171. See anon., 'Dinner by the Phrenological Society ...to Dr. Spurzheim', PJ, V, 17, 1829, 102-42, esp. 103-8.

172. See Fossati, Questions philosophiques, 139ff.; Elliotson, Human Physiology, 1147. Elliotson later complained that the Henderson bequest (which Combe had a large part in administrating) should not have been used to reduce the cost of the Constitution of Man but instead to help publish an English edition of Gall's work (ibid.,

389, 1161-2), a viewpoint Combe found, not unnaturally, offensive (see interchange between Combe and Elliotson, 10 March 1838, NLS 7388, fo. 8 (Combe to Elliotson); 21 March 1838, NLS 7246, fo. 127 (Elliotson's reply); and Combe's final rejoinder, 23 April 1838, NLS 7388, fo. 22-4).

173. George to Andrew Combe, 29 April 1824, NLS 7377, fo. 58.

174. Spurzheim to Combe, 13 May 1824, NLS 7214, fo. 59.

175. See Giustino, Conquest of Mind, 94-95.

176. See the anonymous 'The London Phrenological Society', PJ, III, 10, 1826, 259-64; 'Dr Elliotson and Phrenology', ibid., 306-9; 'Proceedings of the London Phrenological Society', PJ, III, 12, 1826, 557-64; 'List of Phrenological Societies', PA, I, 1842, 61; 'London Anthropological Society', PJ, XIV, 67, 1841, 193.

177. See anon., 'Phrenology and the British Association', PJ, IX, 42, 1836, 120-6; Watson, Statistics, 42ff.

178. G.S. Mackenzie, 'Copy of a Letter lately addressed to the President...Paris', PJ, XIII, 64, 1840, 205-7, 205.

179. G.S. Mackenzie, 'Letter from Sir G.S. Mackenzie, Bart. to the Editor of the Phrenological Journal', PJ, XIV, 68, 1841, 340-2, 340.

180. anon., 'On the Requisites for the Advance of

Phrenological Science', PJ, XIII, 63, 1840, 97-119, 109.

181. See 'Short Communication', PJ, X, 50, 1837, 368 replying to Watson's comments in his Statistics, 148-52 and passim. Watson was the editor of the Phrenological Journal from 1837-40 when it was transferred to London (see 'The Phrenological Journal', PJ, XIII, 65, 1840, 386-7) after which it returned again to Edinburgh to be edited by Robert Cox (see 'Address to our Readers', PJ, XX, 93, 1847, 463-7, 466). Watson had overseen the shift in the journal towards a more populist format, and Elliotson attacked him for this reason (Elliotson, Human Physiology, 417n).

182. See 'Phrenological Society', TZ, I, 1, 1844, 41-58.

183. 'To the Editor of the Phrenological Journal', PJ, III, 10, 1826, 264-9, 265.

184. Elliotson reported with disgust that Spurzheim in his lectures had not only abandoned all mention of the anatomy and physiology of the brain, but also informed his audiences that 'an acquaintance with the old anatomy of the brain was just as useful' (Human Physiology, 1148). See also Atkinson's remarks (Atkinson and Martineau, Letters, 23, 201-16; Hunt ('Localisation', 204) and Samuel Solly, The Human Brain (2nd ed.), 1847, x, 396, also stress that Gall's followers were concentrated in London. Interestingly, Elliotson is believed to have asked Gall to counter Spurzheim and Combe's influence by writing a shorter, more accessible work; this Gall refused to do (see Hedderly, Phrenology, 122).

185. George Combe, 'Address delivered at the Anniversary Celebrations of the Birth of Dr. Spurzheim... 1839', PJ, XV, 72, 1842, 193-213, 195; see also 'Dr. Elliotson versus Spurzheim', PJ, XI, 56, 1838, 225-47.

186. The report appears in NLS 7411, fo. 8; it was received on 22 January 1836.

187. Vimont, Traité de phrénologie, I, 22, 29, II, 52-54, 117-8. See also F.J.V. Broussais, 'Lectures on Phrenology, Lecture One', The Lancet, 30, 1836, 417-23; 'Lectures on Phrenology, Lecture Five', ibid., 545.

188. G.A.L. Fossati, 'Discourse pronounced over the Tomb of Dr. Gall, 27 August, 1828', PJ, V, 20, 1829, 580-4, 582. Spurzheim replied to the earlier remarks with a 'Letter from Dr. Spurzheim to the Editor of the Phrenological Journal', PJ, V, 19, 1829, 422-6. For the Journal's dismissive rebuke see 'Journal de la Société Phrénologique de Paris', PJ, IX, 46, 1836, 505-15, 505. Vimont wrote privately to Combe to convey his opinions about the lack of physiological and anatomical instruction being given by members of the Edinburgh Phrenological Society in their lectures and books twice (12 August 1837, NLS 7244, fo. 53-4 and 29 December 1838, NLS 7248, fo. 114).

189. The LPS, for example, invited Vimont to London in 1831 ('London Phrenological Society', PJ, VII, 28, 1832, 93-4, 94) and Elliotson made frequent visits to Paris (Elliotson, Human Physiology, 1147-48). Vimont's important work on comparative phrenology was referred to briefly only

in the Journal ('Review of Treatise on Human and Comparative Phrenology', PJ, VII, 30, 1832, 379-80; 'Traité de la phrénologie humaine et comparée', PJ, X, 51, 1837, 489-94), and I could discover only one other article on the subject of comparative phrenology in the PJ's twenty volumes: 'Comparative Phrenology', PJ, VII, 28, 1832, 185-7.

190. Engledue, Introductory Address, 1.

191. ibid., 2. G. Atkinson later suggested the term 'phreno-physiology' intending to link up Gall's work with Spurzheim's, London with Edinburgh (Atkinson and Martineau, Letters, 17).

192. Engledue, Introductory Address, 2.

193. This is the claim made by the 'Scottish Phrenologists' in remarks appended to Engledue's address as printed in the Phrenological Journal (see PJ, XV, 73, 1842, 317-18). The article they referred to was 'Materialism and Scepticism', PJ, I, 1, 1824, 120-46; the journal returned to the subject again but never at such length (e.g. 'On Materialism', PJ, II, 5, 1825, 147-51; 'Fatalism and Phrenology', PJ, II, 8, 1825, 520-8; 'Fatalism, and the Church of Scotland', PJ, III, 10, 1826, 252-8; 'Fatalism and Phrenology', PJ, VIII, 39, 1834, 547-9; 'Phrenology and Materialism', PJ, XI, 52, 1838, 436-7; and 'Review of Charles Bray, The Philosophy of Necessity', PJ, XV, 71, 1842, 161-74).

194. James Simpson, R. Cardwell, J.S. Buckingham, et al., Declaration, 1st November, 1842, 1842 (signed by twelve members altogether).

195. G.S. Mackenzie, 'The Split in the Phrenological Association', PJ, XV, 73, 1842, 343-46; see also the 'Remarks by the Editor', ibid., 346-50.

196. See Giustino, Conquest of Mind, 94-95.

197. See 'Intelligence, & c.', PJ, XV, 73, 1842, 383; 'Materialism and the Phrenological Association', PJ, XVI, 74, 1843, 40-59; Engledue's Address was separately reviewed in PJ, XV, 73, 1842, 373-5.

198. 'Intelligence, & c.', PJ, XVI, 74, 1843, 94-6; five more later joined the sixty-six, see 'Intelligence, & c.', PJ, XVI, 75, 1843, 207.

199. 'Intelligence, & c.', PJ, XVI, 76, 1843, 309-10.

200. 'Introductory Address - Materialism', PA, II, 1843, 17-22, 17.

201. Alexander Falkner, 'Materialism and Immaterialism', ibid., 39-41.

202. 'Intelligence, & c.', PJ, XVII, 78, 1844, 98-9. The LPS also grew in 1842 (see 'Intelligence, & c.', PJ, XVI, 75, 1843, 194-96).

203. 'Intelligence, & c.', PJ, XIX, 88, 1846, 286.

204. Gibbon, Life of George Combe, II, 274-75.

205. 'Address to our Readers', PJ, XX, 93, 1847, 463-7.

206. See Giustino, Conquest of Mind, 99, 103n.

207. The Zoist claimed, indeed, to provide the forum for debate which the Phrenological Journal had refused, and published contributions relating to Engledue's Address, e.g. 'Letter from Mr Atkinson, on the Conduct of Certain Members of the Phrenological Association, to the Editor of the Phrenological Journal, but rejected, November 1842', TZ, I, 2, 1844, 143-8; 'The Declaration of Expediency', ibid., 148-56; John Elliotson, 'Mr Sampson and Mr Simpson', ibid., 156-60 and idem, 'Address to the Phrenological Association', TZ, I, 3, 1844, 227-46; T.S. Prideaux, 'The British Association and Cerebral Physiology', TZ, IV, 16, 1847, 473-80 (see esp. 476); J.B. Mège, 'The Fundamental Principles of Cerebral Physiology applied to Philosophy', TZ, III, 10, 1846, 139-50; John Elliotson, 'Phrenology as it affects Free-Will', TZ, III, 12, 1846, 418-26 (see esp. 421).

208. 'All those who were acquainted with Gall', the Zoist wrote, 'Drs Fossati, Dannecy, Elliotson, & c., & c., know perfectly well that he was a materialist. And what is the disgrace in being a materialist' ('Some Particulars respecting Gall', TZ, II, 8, 1845, 455-65, 460). See also L.E.G. Engledue, 'Fact against Fancy', TZ, III, 9, 1846, 1-22, esp. 1-3.

209. 'Lecture Mania', TZ, I, 1, 1844, 95-100, 95.

110. See L.E.G. Engledue, 'Introduction to the Seventh Volume of the Zoist', TZ, VII, 25, 1850, 1-9, esp. 2-3; also the comments appended to J.B. Mège's article, 'Fundamental Principles', 151-52. The Phrenological Journal just had time before it expired to reply to the latter and said that

the Zoist would do better to enrich the world with 'practical work' rather than engage in 'empty declamations' against the Edinburgh society (see 'The Zoist', PJ, XIX, 87, 1846, 189-93, 192).

211. Elliotson, Human Physiology, 367. The sentiment was reiterated later by Joseph Jastrow, who felt that phrenology after Gall descended into the 'slums of psychology' ('The Antecedents of the Study of Character and Temperament', The Popular Science Monthly, 86, 1915, 590-615, 605). See also William Hamilton's remarks in Gibbon, Life of George Combe, I, 191-204.

212. OFB, I, 17-18.

213. OFB, I, 101-102.

214. See OFB, III, 167-68 for an example.

215. See A. Ysabeau, Lavater et Gall. Physiognomie et phrénologie rendues intelligibles pour tout le monde, Paris, n.d., c. 1860, 61, 165.

216. See Hall, 'Gall's Phrenology', 305.

217. See G.T. Clapton, 'Lavater, Gall et Baudelaire', Revue de littérature comparée, 13, 1933, 259-98, 429-56, 287-88.

218. See Jurgis Baltrusaitis, Aberrations, Paris, 1957, 41, 55n.

219. See for example, Brown, 'Review of Lettre', 156; and for a recent acknowledgement of the point, George Sidney Brett, A History of Psychology,

3 vols, 1921, III, 92.

220. OFB, II, 201-02.

221. See OFB, V, 265; VI, 240-41; V, 254-55.

222. OFB, VI, 21-23.

223. OFB, V, 262.

224. See OFB, III, 109.

225. OFB, V, 267.

226. ibid.

227. OFB, V, 268.

228. OFB, V, 269-70.

229. OFB, V, 271, 295.

230. OFB, V, 295.

231. OFB, V, 298.

232. See OFB, I, 18.

233. See P.I. Heisch, Memoirs of John Caspar Lavater, 1842, 95ff., which suggests that Gall might well have written a physiognomical treatise in continuation of Lavater's work had he not died in 1828.

234. Young, Mind, Brain and Adaptation, 33n.

235. 'Phrenology' was first coined by Thomas Forster

in 1815 in The Pamphleteer and later, where it is introduced in the last sections without explanation, in his Sketch of the New Anatomy and Physiology of the Brain and Nervous System of Drs Gall and Spurzheim considered as Comprehending a Complete System of Zoonomy, 1816. Davies, Phrenology, 8, is one of the many historians who have taken Spurzheim's claims respecting this on trust.

236. See Spurzheim, Phrenology in Connexion, 197-98.

237. ibid., 186; see Spurzheim, Outlines of the Physiognomical System, 223.

238. Spurzheim quoted in Chenevix, Phrenology Article, 62-63.

239. Spurzheim, Essai philosophique, 220-21.

240. e.g. Gordon, 'Review', 250; Jeffrey and Gordon, The Craniad, 127.

241. J.G. Spurzheim, Examination of the Objections made in Britain against the Doctrines of Gall and Spurzheim, Edinburgh, 1817, 80.

242. Spurzheim, Outlines of the Physiognomical System, 226-27.

243. See Spurzheim, Phrenology in Connexion, 179-81.

244. J.G. Spurzheim, Phrenology, or the Doctrine of the Mental Phenomena (1825), 2 vols, Boston, 1835, (4th ed.), I, 97.

245. Spurzheim, Outlines of the Physiognomical System, 225.

246. Spurzheim, Phrenology in Connexion, 207.

247. ibid.

248. Spurzheim, Outlines of the Physiognomical System, 59ff.

249. Spurzheim, Phrenology in Connexion, 359-66.

CONCLUSION

Potentially the history of science is a fertile meeting-ground for scholars trained in a wide variety of disciplines. In practice, however, such meetings are disappointingly few. If any general descriptions of this particular thesis are appropriate, then none is more so than the label 'inter-disciplinary', for from the posing of the problem at the heart of this work, through the conceptual-historical treatment of that problem and solutions to it, up until this final conclusion, I have tried to produce something other than a straightforward narrative of the kind which is either general and exhaustive or particular and assimilable into any of the pre-given rubrics under which academics do their business. Instead of this, I have sought to assemble and juxtapose a large variety of different kinds of materials and treat them in a manner which takes account of the particular status of each whilst at the same time emphasizing ways in which they must be conjoined. The bibliography that follows will give some indication ofthe scope of my work and the particular introductions and conclusions interspersed within the text itself will have alerted the reader to the ways in which evidence in one section of the work is brought to bear on the problems raised in another, and to the ways in which the chapters within each of its three parts are linked together.

It remains however that some general sense of my achievements should be given, and with this some more specific comments about where further research might be useful and more thought appropriate. As in any other piece of work, this thesis has no pretensions to have exhausted any particular historical problem; rather the contrary, it would claim if anything to have opened up to investigation more issues than it has settled. And as with any other thesis representing

original and sustained research, this thesis establishes its arguments and demonstrations on a number of distinct levels and with differing degrees of rigour. In some cases, I feel that my claims are established beyond reasonable doubt, in others my confidence is less well-founded, in others still I must acknowledge that far more research would be needed before I could move from my hypothesis to something approaching a properly documented finding. It would be tedious in the extreme to run through the whole of my work pointing out where a particular fact has been noted for the first time, where a particular reading is original, where a statement is well-established, and where a presentation of evidence takes a novel form. Nonetheless, I do feel that such a lengthy, intricate and far-ranging thesis would not satisfy the reader without its author making clear what are its major achievements.

In part one I have presented for the first time an account of the debates and positions adopted concerning the status and characteristic meaningfulness of the human body in a wide variety of independent but closely inter-related discourses and discursive practices from the mid- to the late-eighteenth century. This period witnessed a rapid growth in status of a native artistic and critical culture with its attendant institutions, leading personnel, publications, rules and standards. Within this culture the relations between the external features of the body and the mind appeared above all as a problem of representation; a problem because the critical vocabulary, the range of concepts, rules and dogmas- in short, the elements which went to make up the hegemonic explanatory structures- prevented representations from conveying in anything but

the most general way the specific features of a man or a woman's mind and body. In art and aesthetics, the most pressing element which proscribed detailed representations was the doctrine of uniformitarianism, a doctrine overlaid and to a great degree inspired by ethical and political considerations, but one which affected greatly the kinds of perceptions that an artist or critic could have or convey. Construed, or better still constructed, within artistic discourse the body and mind posed representational problems at the perceptual level and it was at this level that critics of official art and critical culture developed their alternative positions. The nature and problematic status of seeing has been introduced in chapter one both because of its usefulness as a means to trace and situate debates in the eighteenth-century discourses studied in part one, and because it becomes essential in the process by which physiognomy and phrenology come to be widely accepted in the the early nineteenth century. What had been a problem in the mid 1700s becomes, in a different context governed this time by a scientific culture, the solution to that problem.

In the mid 1700s, the problem of perception assumed a number of guises, all of them subsumed under the forms of representation being pioneered at the time. The apparent particularity of the human body, its essential difference from other bodies, was to be swamped both by the philosophical and ethical thrusts of the ruling artistic ideology of the time but also by a form of visual discrimination, inculcated in training at Reynolds's Royal Academy, which either distilled the uniform from the particular by rules for painting and drawing or actually perceived bodies as general forms. This is a startling claim to make, but I believe that it

has been strongly corroborated by the evidence presented in part one. The claim is startling because it is common to equate, almost by defining one in terms of the other, the visual and the particular- surely the act of seeing is preliminary to the act of describing and to describe is to see fully and exhaustively? The claim is also startling because the empirical and the particular are also associated and equated, again almost by defining the one in terms of the other. My detailed case-study of Reynolds shows however that here we are faced with a thinker much influenced by Lockean epistemology who nevertheless refuses to allow artistic representations to settle on the level of the local and the concrete. Hogarth (and in a slightly different way, Fielding) furnishes further proof of this; seldom can a painter have been more particularist and empirical in his work, yet Hogarth too is adamant that the visual representations he provided of bodies could not stand alone as vehicles for the communication of meaning. Hogarth was not affected by the uniformitarianism of the connoisseurs, and he accepted that the external features of the body conveyed something of significance about the character of its owner. He accepted in principle that such features were therefore important and should be represented on the canvas rather than being generalised. Yet, once again, we meet in Hogarth (as in Fielding) a problem of representation expressed in perceptual terms. The source of the problem lies not in aesthetic or philosophical realms but in the to and fro of political business and social life where representations derived increasingly from the theatre and the elocutionary movement, served to offer the body as a mass of significant and insignificant messages, as a conglomeration of truth and falsehood. The impoverished moral condition of society encourages and is sustained by the play of the hypocrite-

actor-pollitricker, and that play is visually impenetrable. Even for those like Hogarth and Fielding for whom deceit and affectation need to be banished as languages of human intercourse and bonds of human relations, the anarchy of appearances prevents honesty triumphing.

The often-deplored fact that appearances, acts and speech serve not to communicate but to hinder communication, and serve not to represent but to misrepresent, was an impetus to those attempting to place appearance, acting and speaking on a stable, rational, decipherable basis. In chapters two and three I examined ways in which acting and speaking were treated and showed that such a basis was never secured. Whilst behaviour and speech could be purified and 'read' as meaningful, what they conveyed was deemed to be relatively unimportant compared to what was conveyed by appearances. The problem of human appearance, its connections with human essence and the way in which those connections could be deployed, lay at the heart of debates about acting. It was a central feature of the actor's relations to the audience. It occupied a similar place in debates about speaking techniques and, as the problem was resolved, so too the speaker's relations to the audience could be more clearly articulated.

In the case of the elocutionary movement, the distinction between the manner and the matter of a speech became crucial; indeed, as I have shown, this distinction founded the movement. Various gestures and speech acts can be developed to communicate the matter of a speech, but in order to persuade a large audience of the importance, the sincerity, or the force of that matter

other factors had to be considered. Passions had to be conveyed, emotions had to be addressed, feelings had to be incorporated into the manner and the matter of speaking. Likewise in the case of acting. It was for this reason that texts of the period which dealt with the communication of words and messages on stage or in public relentlessly returned to the problems of appearance- natural versus artificial appearance, general versus particular appearance, fixed versus changing appearance, the various significances of different parts of the body, and so on. And it was because the terms in which these problems were treated were perceptual terms, and the manner in which perception was treated was bounded by the extreme positions represented by Reynolds and Hogarth, that the discourses of acting and elocution resembled in the ways we have shown those of art, criticism and the novel. This resemblance, furthermore, has allowed me to show how and why the clearest statement of the problem of perception in the work of Hogarth and Fielding is not infrequently reiterated in later texts on elocution and acting, but never solved there.

The long discussion of the rise and character of scientific culture in Britain in the early nineteenth century has served to show how a completely different set of institutions, personnel, concepts and practices- a new ideology and explanatory structure- allowed physiognomy and phrenology to repose and then resolve the perceptual problems discussed in part one.

Phrased in this careful and modest way, such a claim is, I believe, more than adequately supported by the evidence and the arguments I present in chapter four to seven. There I show that a new scientific

culture did indeed arise in the 1820s and 1830s, in part as a response to the lack of such a culture in the previous century or so. As such, this is hardly a startling claim, though I believe the groundwork I have done amongst dozens of primary sources along with the rigorous consideration I have given to secondary accounts of scientific developments during this period has allowed me to provide a more comprehensive explanation of the status and role within that culture of two scientific ideologies- Baconianism and Whewellianism. Within my text, the first of these is quite central; the second acts as a contrast and eventually figures within my examination of the historical and epistemological growth of organology and phrenology in Britain.

Baconianism- the philosophical, ideological, and scientific underpinning of physiognomy and phrenology in Britain- becomes altered as it is incorporated into various institutions (the BAAS, the Mechanics' Institutes, and the SDUK) and as it is made to serve the interests of the new characterologies. This is a novel claim, and one which if it is true, has a whole number of important consequences. I should stress before considering the claim itself that my objective in part three, even in chapter eight itself, was not to provide a general account of Lavater's work, nor even of his authorship of the Physiognomische Fragmente, though it may be that a result of my claim itself will be to alter or assist such a general account. In his extensive study Graeme Tytler has dwelt on the life and theological and religious beliefs of Lavater and his circle of friends, correspondents and admirers. He has set out to contextualise Lavater as fully as possible within his German and Swiss context and, having done this, Tytler has tried to show how this historical

reconstruction assists one in understanding Lavater's work.
It would have been inappropriate for me to have included a review or general critique of Tytler's work in the body of chapter eight as it does not intersect my own interests except at a few minor points, to which I refer. However, my chapter was informed by Tytler's book and I was especially struck by two points. Firstly, my impression that the immense labour that was put into detailing Lavater's context was not actually rewarded by a particularly insightful- or even coherent- reading of the Physiognomische Fragmente itself. Tytler no doubt shed light on Lavater's personality, his life, and his friends; his reading of Lavater's work was not, I feel, more than occasionally illuminated by such light. Secondly and relatedly, physiognomy itself is reduced almost completely to the background Tytler paints and becomes a curious and wholly unimpressive mixture of religion, philosophy, history, caricature, rhetoric, bold statement and special-pleading. I was determined to try to relate the conditions of existence and production of the Essays on Physiognomy to the 'context' in which it was produced, circulated and had great impact in Britain.

First of all, this meant that the text itself had to be specified and this I have done: the text is the most popular and widely diffused edition of Lavater's work- Holcroft's edition. If I was right in my claims that Baconianism was a dominant scientific ideology in the 1820s and 1830s (and that it had been widely discussed from the late 1780s onwards) and in my claims as to the character of that ideology then Baconianism should assist in the reading of that text and in the account of its history and influence. It will be seen that the time I spent in part two detailing the nature and

status of Baconian scientific culture serves the purpose of allowing me to situate physiognomy and, later, phrenology.

The features I emphasize as particularly Baconian- the importance of visual perception in acquiring knowledge, the breakdown or refusal of a classification of the sciences, the importance of co-operation in scientific work, the stress on the corroboration of theories and hypotheses by frequent individual experiment or observation, to cite some of the most important features- are brought to bear in my reading of the Essays on Physiognomy in chapter eight. There I have shown that a fully coherent and persuasive account of that text can come about once it is treated as inaugurating a Baconian science of physiognomical perception; and to assist in that account I have shown the importance of the images in that work, images which served to guarantee the work's accessibility, generality, and wide applicability. I should say that my reading of the text is not necessarily the only one available. Indeed, as I mention in chapter nine in treating the work of Gall and Spurzheim, a 'Whewellian' reading of Lavater's work would consign it to the rank of pseudo-science, nonsense and incoherence, just as such a reading consigned important texts of Spurzheim to such oblivion. In other words, the two ideologies I have set out in part two serve to explain how 'one' text can be widely accepted in one ideology, with its institutions, public and organs and be just as widely rejected in another, equally potent, ideology. Crucially, as I explain in a patient reconstruction of the changes in phrenology through the 1820s and 1830s, these two readings are incommensurable. After some initial attempts at dialogue, expressed nowhere better than by Spurzheim's attempts to win over his antagonists, energies

are devoted to preventing fruitful communication across ideological divides. Phrenology occupies one particular site, its detractors another.

This general claim is borne out by the evidence I have gathered from both 'sides', particularly from the unpublished sources of George Combe, Spurzheim and other early phrenologists. I have no doubt that further historical study would be required before my own account of the development of phrenology, and particularly of its increasing incorporation into physiognomy, could be fully substantiated. Similarly, more research would allow one to posit more clearly the relations between the champions and the detractors of the various characterologies popular in the early decades of the nineteenth century. As I have said in chapters eight and nine, we remain ignorant of the full extent of the interest in such subjects as physiognomy, pathognomy and phrenology in Britain- even more so of the implications and consequences of that interest. Studies of particular phrenological societies, of regional contrasts, and of the role of the Literary and Philosophical Societies and Mechanics' Institutes will greatly assist in this task; such studies will also help to confirm or put into question my claims about the specifically scientific and specifically Baconian nature of physiognomy and later phrenology.

One recent study of the BAAS by Morrell and Thackray has no doubt thrown much light on the issues I have discussed in this thesis. And as is quite proper I have made over a dozen references to this work in the course of chapter eight and summarized its major thesis at a number of points in part two. From this it should be reasonably

clear in what major respects I take issue with this detailed study of the early years of the BAAS. However, it would be appropriate for me to return briefly to this work since it documents attempts made by the phrenologists to seek a dialogue with the guardians of 'Whewellian' ideology, in apparent conflict with the claims I have made about the refusal of such a dialogue. In a sense of course, the BAAS leadership did indeed refuse to accomodate the members and representatives of the phrenological community. On the other hand, the latter did seek to make common ground with the BAAS, or at least attempt to take a part in its annual festivities. It is to provide a basis for this apparent anomaly that I have chosen to detail the development of the BAAS so carefully.

Whilst I have relied on all the secondary sources available on the early BAAS and on a mass of primary sources as well, the emphasis I have chosen to put on the role of Baconianism within the BAAS is novel. Morrell and Thackray suggest, like many others, that Bacon was a figure of inspiration to the provincial founders of the BAAS, but that by 1833 he had been dislodged as the BAAS was taken over by a small and selective coterie, the 'Gentlemen of Science'. What this coterie says becomes, for Morrell and Thackray, almost wholly representative of what the BAAS says; debates within the BAAS are reduced to debates within its leadership and then further reduced to debates between factions classified according to a small number of types (e.g. Anglican, Tory, Whig) or between individual friendships, ambitions, curiosities and animosities. In contrast, I have approached the history of the BAAS in search of scientific ideologies, to see what images of science and the scientist were entertained by the BAAS- its leadership, of course, but

also in its proceedings and its annual jamborees. Having done so, I have shown that the BAAS's classification of the sciences was not, and could not, be used to legislate or outlaw any sciences which did not model themselves on Section I, for Section I was neither widely accepted as a coherent model nor did it in fact exist as such a model until the early 1840s. I have shown that although the 'Whewellian' leadership remained in control of the BAAS, such control did not express itself in any definite way throughout the membership of the BAAS, still less at annual meetings. Here- and the documentary evidence I cite from the Times and other sources underscores the point- Baconian science continued to be practiced, and because it continued to be practiced and be widely reported in the press, the phrenologists felt it necessary either to be allowed to perform at annual meetings or, failing that, to give lectures at such times and places as would allow the audience at the BAAS meetings to attend phrenological demonstrations. Of course, the Whewellian leadership simply prevented the phrenologists from attending BAAS meetings, just as they had earlier made life difficult for statisticians and physiologists in the organisation, so the phrenologists were forced to appeal directly to those who had joined the BAAS perhaps in its earliest days, or to those attracted by the possibility of contributing to science by sending in an observation like those printed in the Reports.

It will be seen from this that my careful attention to the context of the BAAS, to its development, and to the fullest implications of its decisions about scientific practice, has allowed me to explore in detail the character of Baconian culture and the relations of that culture to physiognomy and phrenology, and also to

throw light on the relationship of physiognomy and phrenology to women, to the universities and the metropolis in England, and to the kind of science which by the mid-1830s had become officially sanctioned.

Such a wide-ranging thesis is bound to raise many questions in the reader's mind. Necessarily in a work which relies so much on a wide reading of materials spread over nearly a century and written in English, German and French, few of these questions will have been answered definitively. As an exploration of the issues raised once it is posited that the body reveals character, this thesis will have proved that these issues were widely discussed in many different discourses from the 1740s to the 1840s. Futhermore, the attention to the status of the theories linking the external features of the body to the internal aspects of the mind will have shown the importance of the nature of the explanations given for their popularity and acceptance or their unpopularity and rejection. By linking/the manner in which solutions were given to problems arising from the attempt to articulate these theories and the constitution of the discourses and the audiences which assessed these solutions and problems, I have shown in some detail the process by which explanatory structures are constituted and evolve. The most difficult aspect of writing history appears when one has to decide exactly what connects a discourse to another across time, or what links the beginning and the end of a development, or what separates two or more theories and what joins together two or more other theories. In this particular thesis none of the standard terms in the historical repertoire would seem well-suited to joining or even separating the positions set out in part one and those set

out in part three. The middle part of my thesis is intended to substitute for what might otherwise have been referred to as an 'influence' of one part on another, or a 'break' between the two, or an 'evolution' from one to the other. My attempt has resulted in my arguing that the development of a Baconian scientific culture made possible the emergence of physiognomy and phrenology in Britain when it did and in the way it did. Certainly, I have established many more links between particular chapters and between particular parts on a smaller scale.

However, it is clear that more research is necessary- particularly on the period from roughly 1800-1830, that curious era which is neither part of the eighteenth century nor part of Victorian times- to establish the connections between the rejection of characterology in the mid to late 1700s and its widespread popularity after about 1825. If this thesis prompts such research, or if it encourages further work by historians of science, literature, art or culture into the subjects I have treated, it will have succeeded in one of its most general aims.

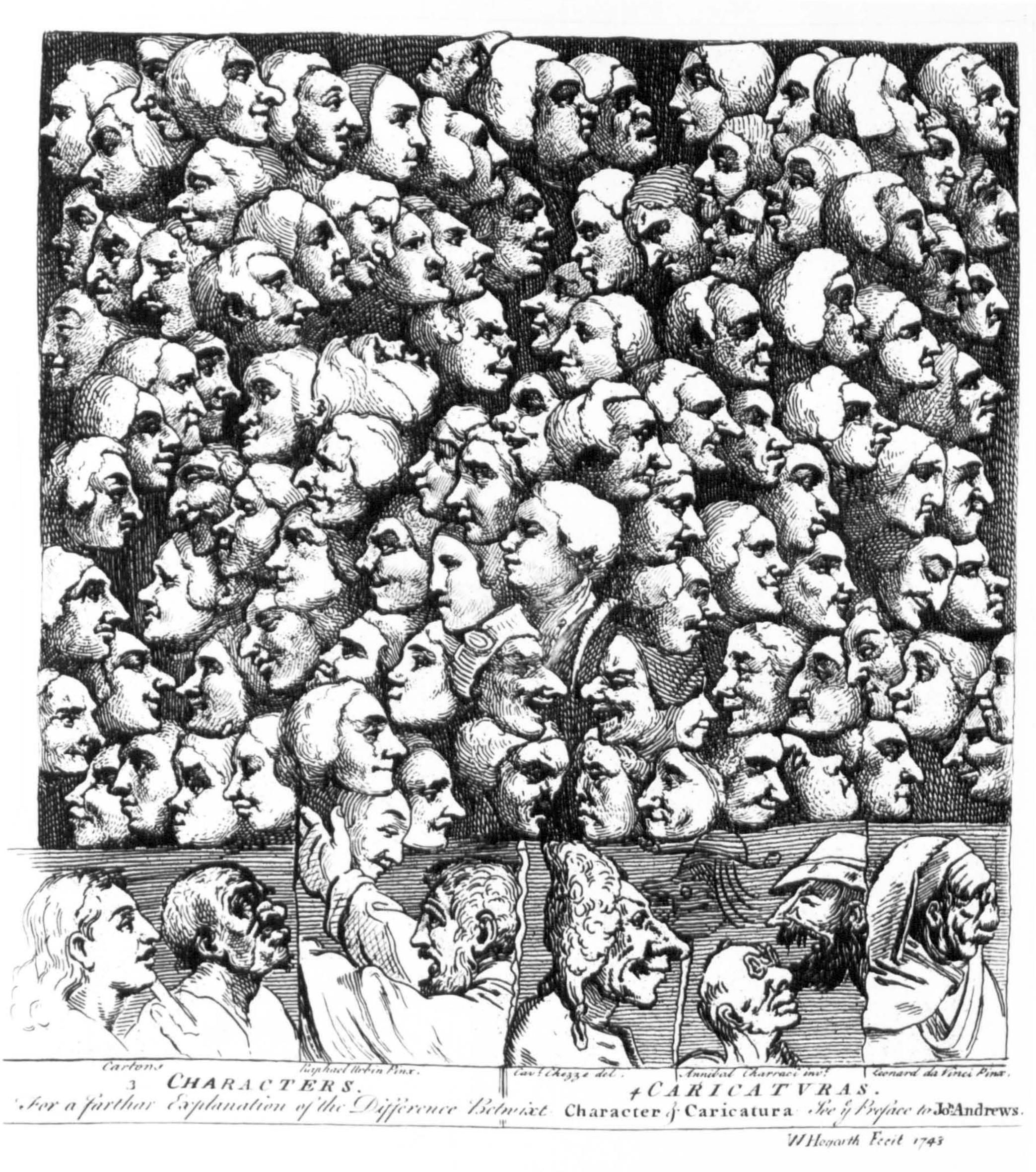


PLATE 1. William Hogarth, Characters and Caricatura, 1743

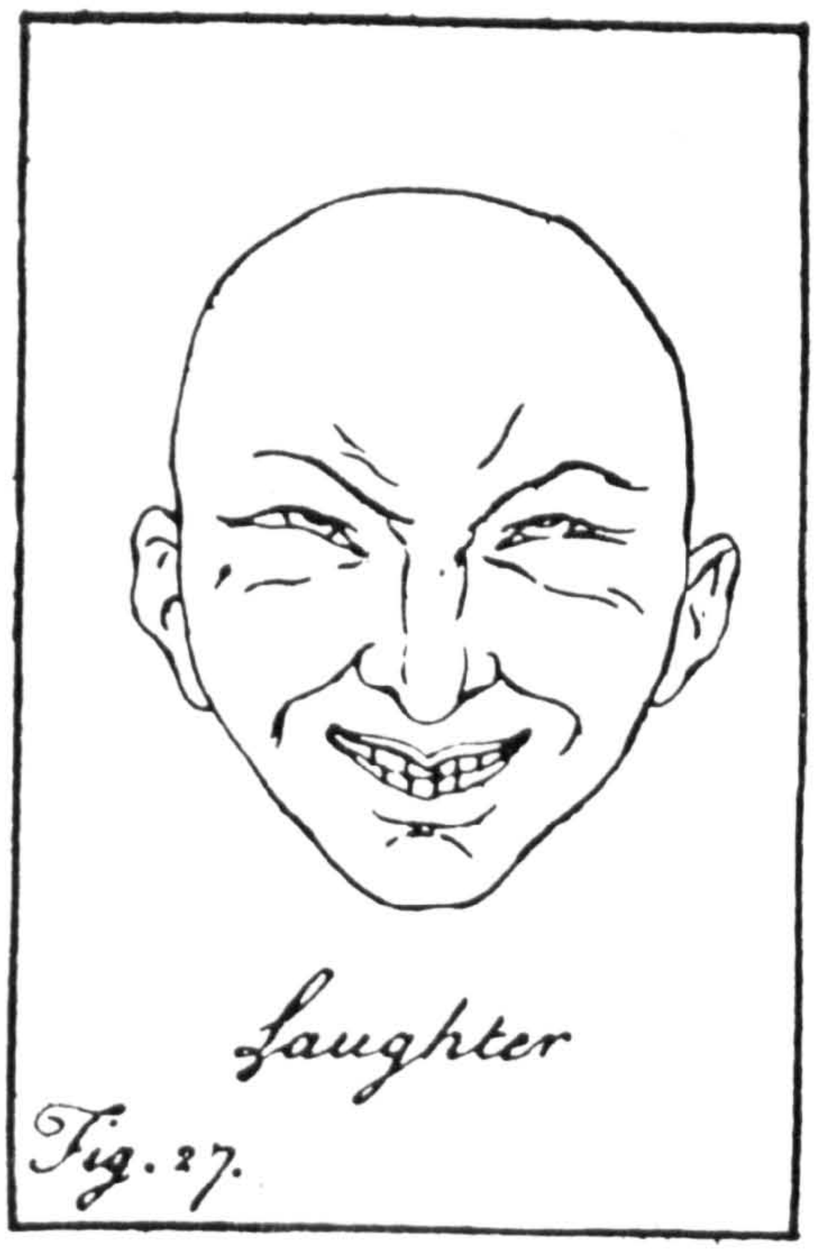
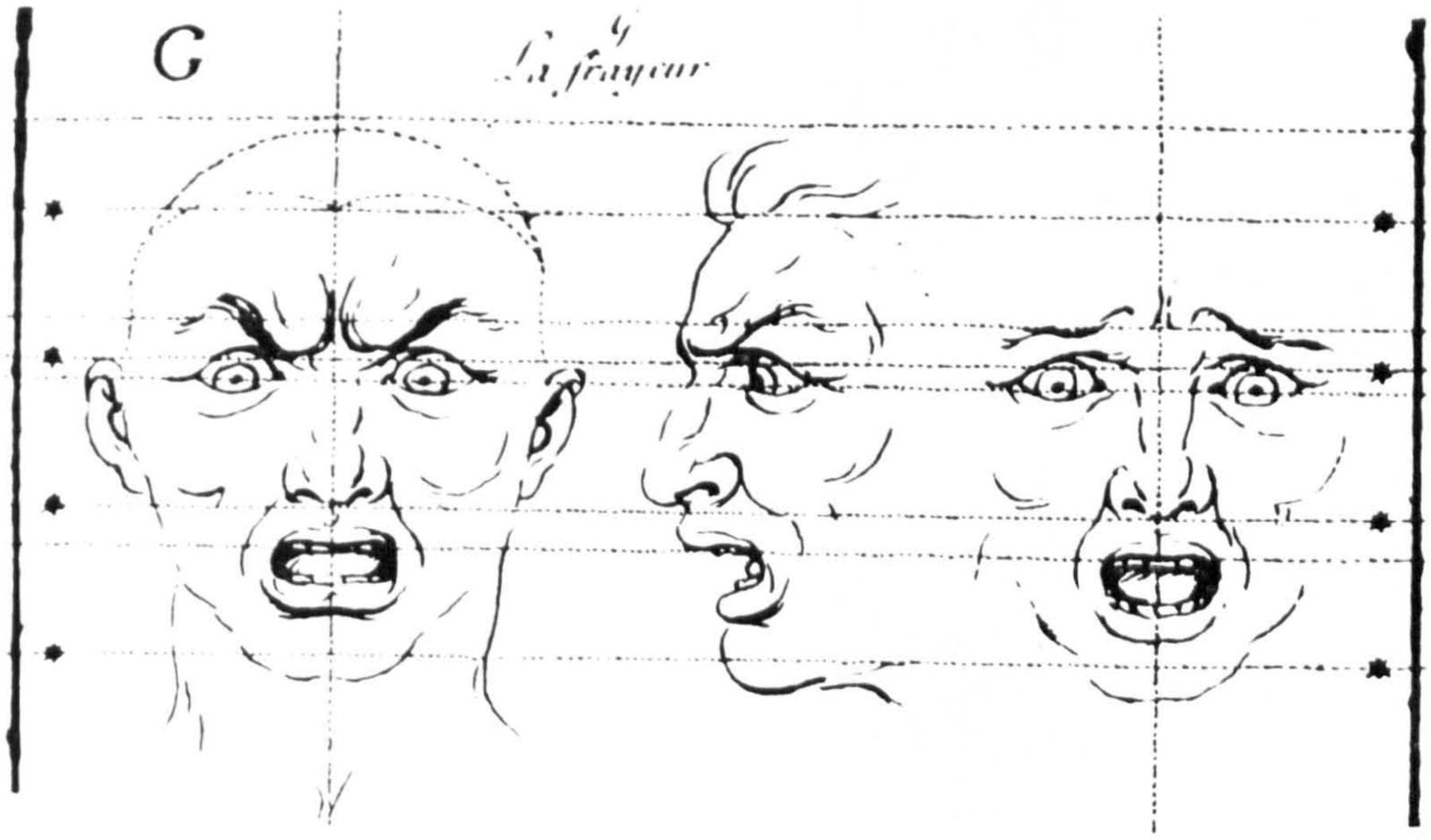


PLATE 2. 'Hope' and 'Laughter' (from Charles Le Brun, A Method to Learn to Design the Passions, 1743)



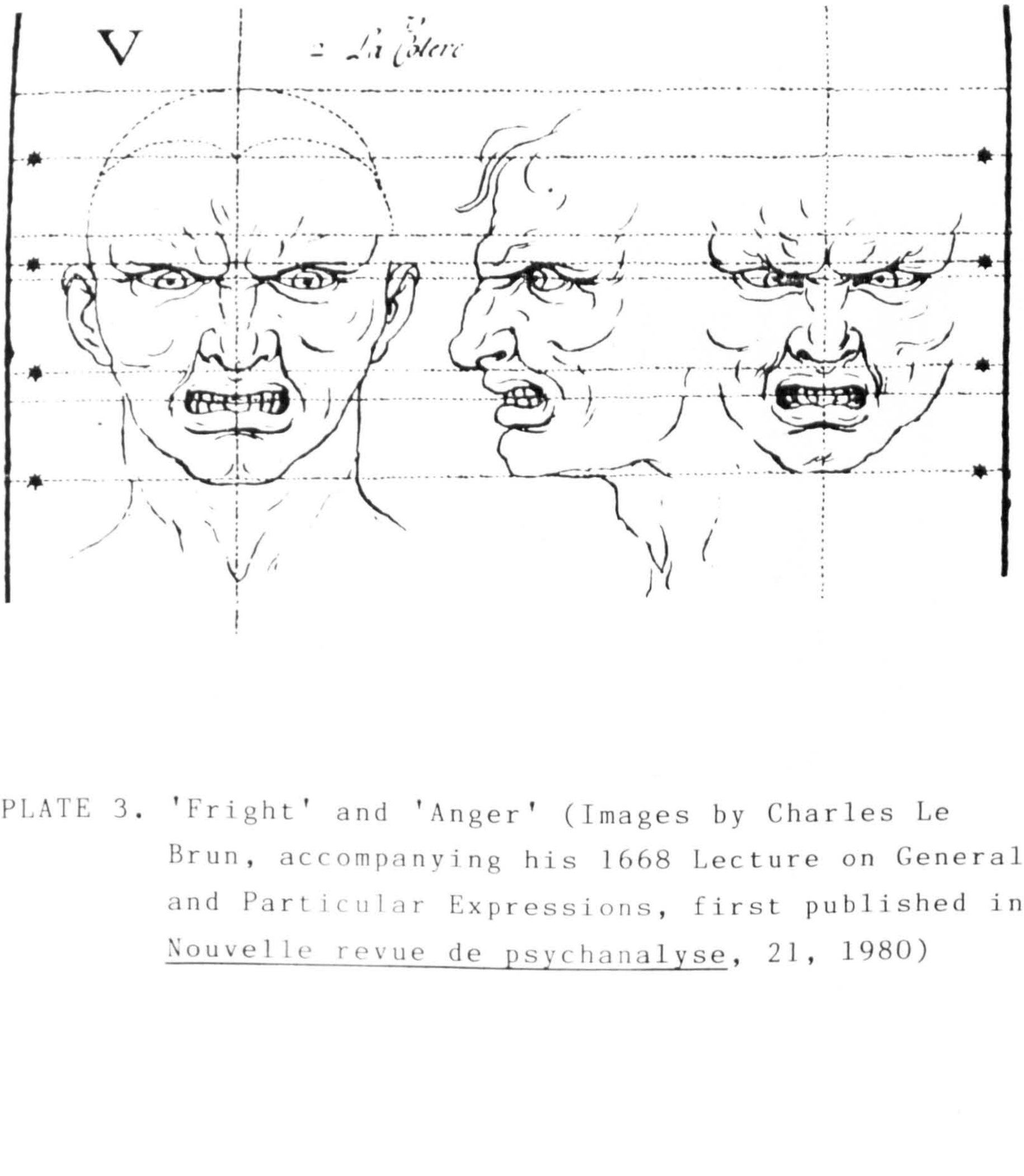


PLATE 3. 'Fright' and 'Anger' (Images by Charles Le Brun, accompanying his 1668 Lecture on General and Particular Expressions, first published in Nouvelle revue de psychanalyse, 21, 1980)

PLATE 4. Le Brun's Zoomorphism (from L.J.M. Morel d'Arleux, Dissertation sur un traite de Charles Le Brun concernant les rapports de la physiognomie humaine avec celles des animaux, Paris, 1806)

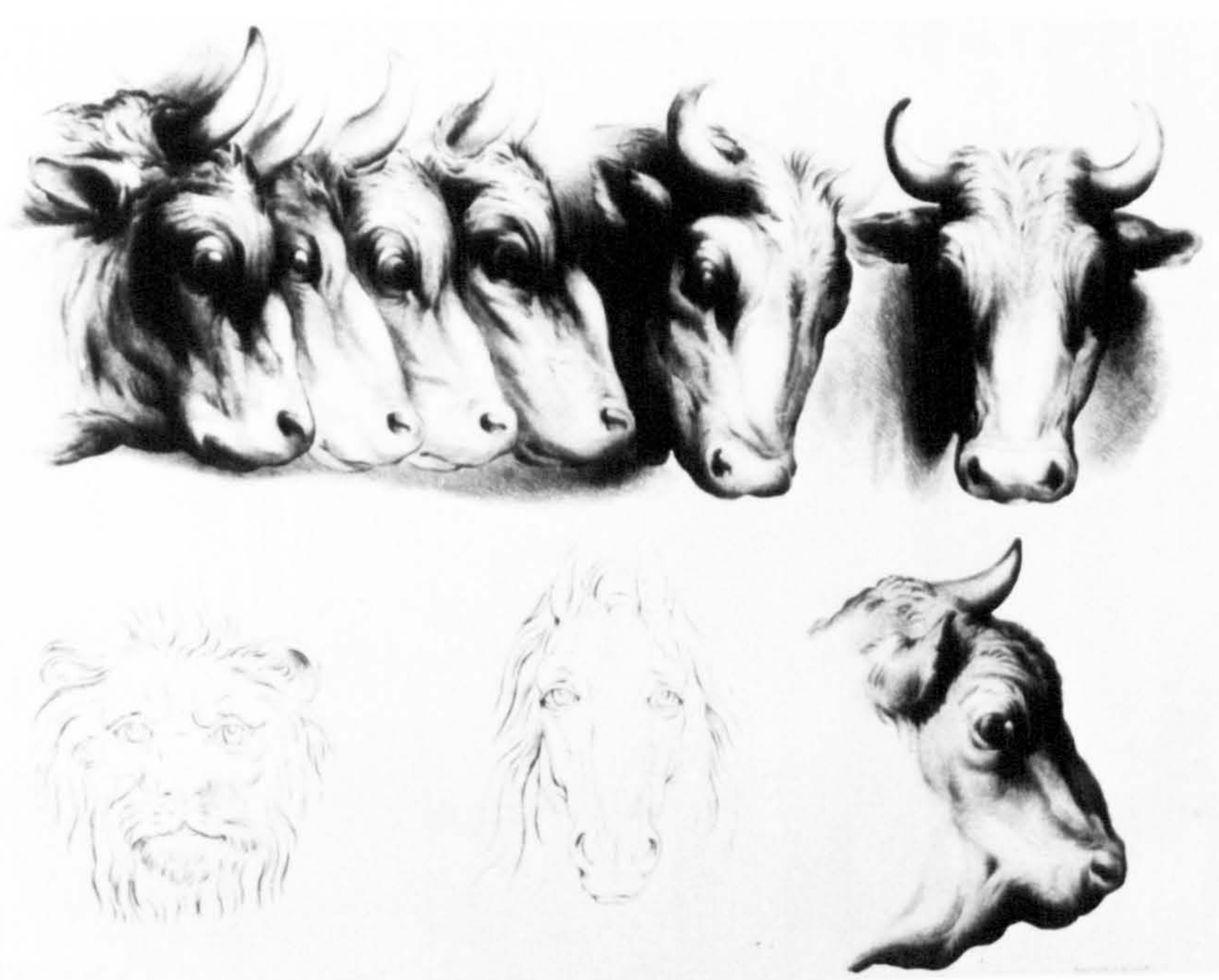
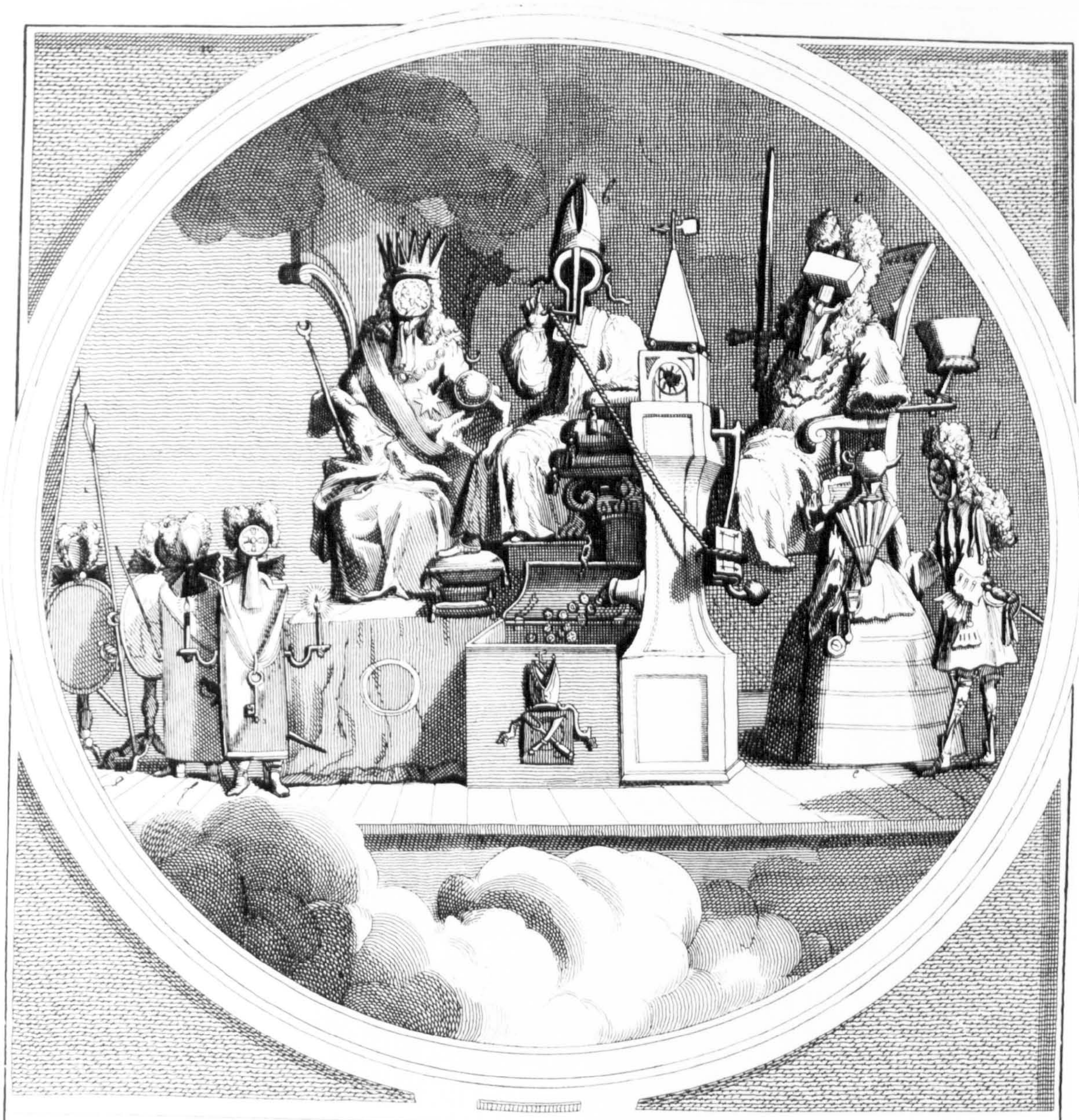


PLATE 4. Human/Beasts by Charles Le Brun (from J.P. Blanquet, A Series of Lithographic Drawings illustrative of the Relation between Human Physiognomy and that of Brute Creation from Designs by Charles Le Brun, with Remarks on the System, 1827)

PLATE 5. William Hogarth, Scholars at a Lecture, 1736



Some of the Principal Inhabitants of y^e MOON, as they Were Perfectly Discovrid by a Telescope brought to y^e Greatest Perfection Since y^e last Eclipse; Exactly Engraved from the Objects, whereby y^e Curious may Guess at their Religion, Manners, &c.

PLATE 6. William Hogarth, Royalty, Episcopacy, and Law, 1724

PLATE 7. William Hogarth,
<u>The Harlot's Progress</u>,
Plate 5, 1733

PLATE 8. William Hogarth, Mr. Garrick in the Character of Richard the 3d, 1746

PLATE 10. Herschel's Bacon (from J.F.W. Herschel, Preliminary Discourse on the Study of Natural Philosophy (1831), 1851, Titlepage)

PLATE 11. Popular 'Science', Vintage 1832-1840
(Frontispiece for The Penny Magazine of the Society for the Diffusion of Useful Knowledge, I, 1832)

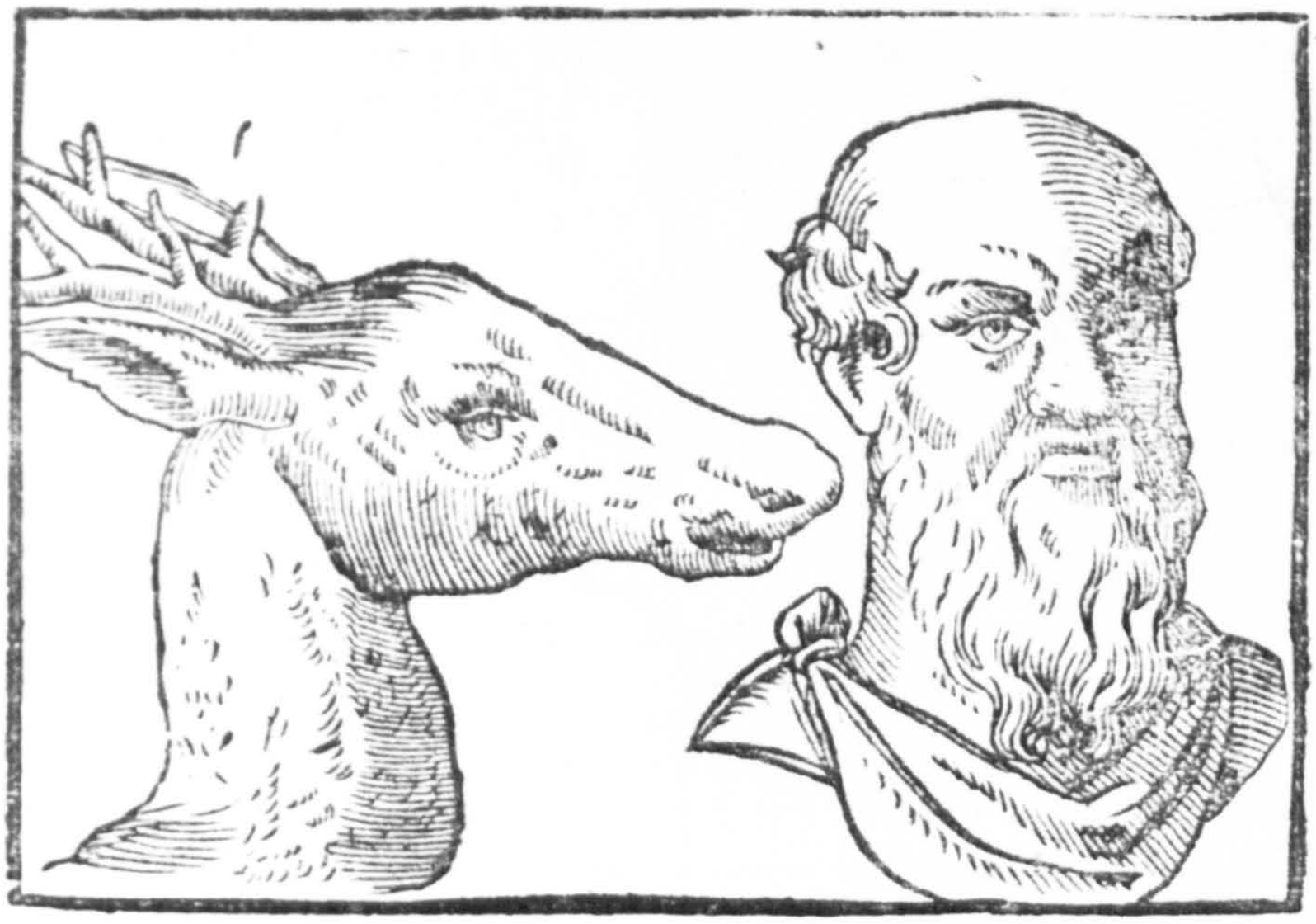


PLATE 12. Socrates-as-Deer (from Giambattista della Porta, Della Fisionomia dell'huomo... Libri Sei, Venice, 1644)

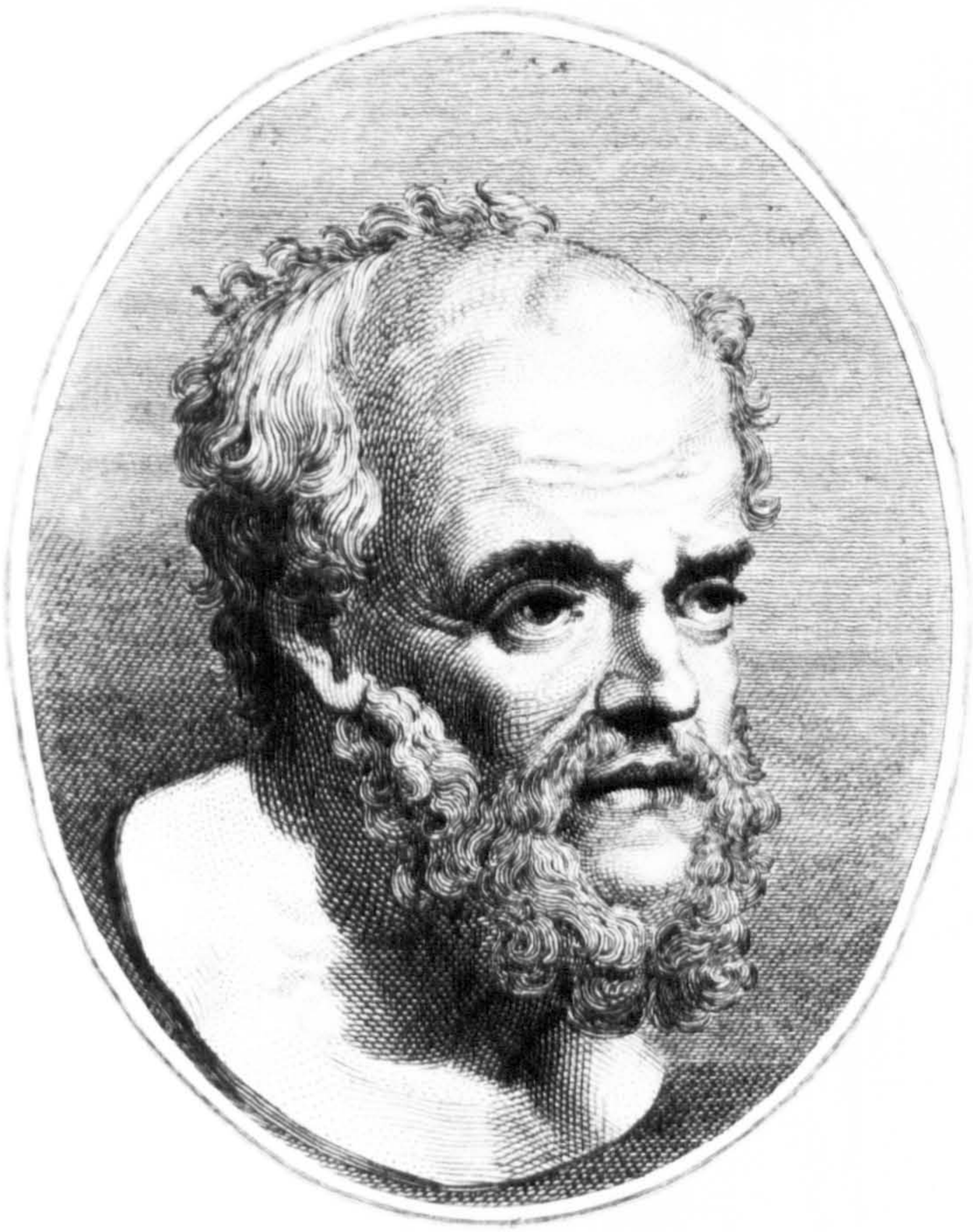


PLATE 12. Socrates-the-Wise (Engraving from Rubens, from J.C. Lavater, Essays on Physiognomy, 1789-1793)

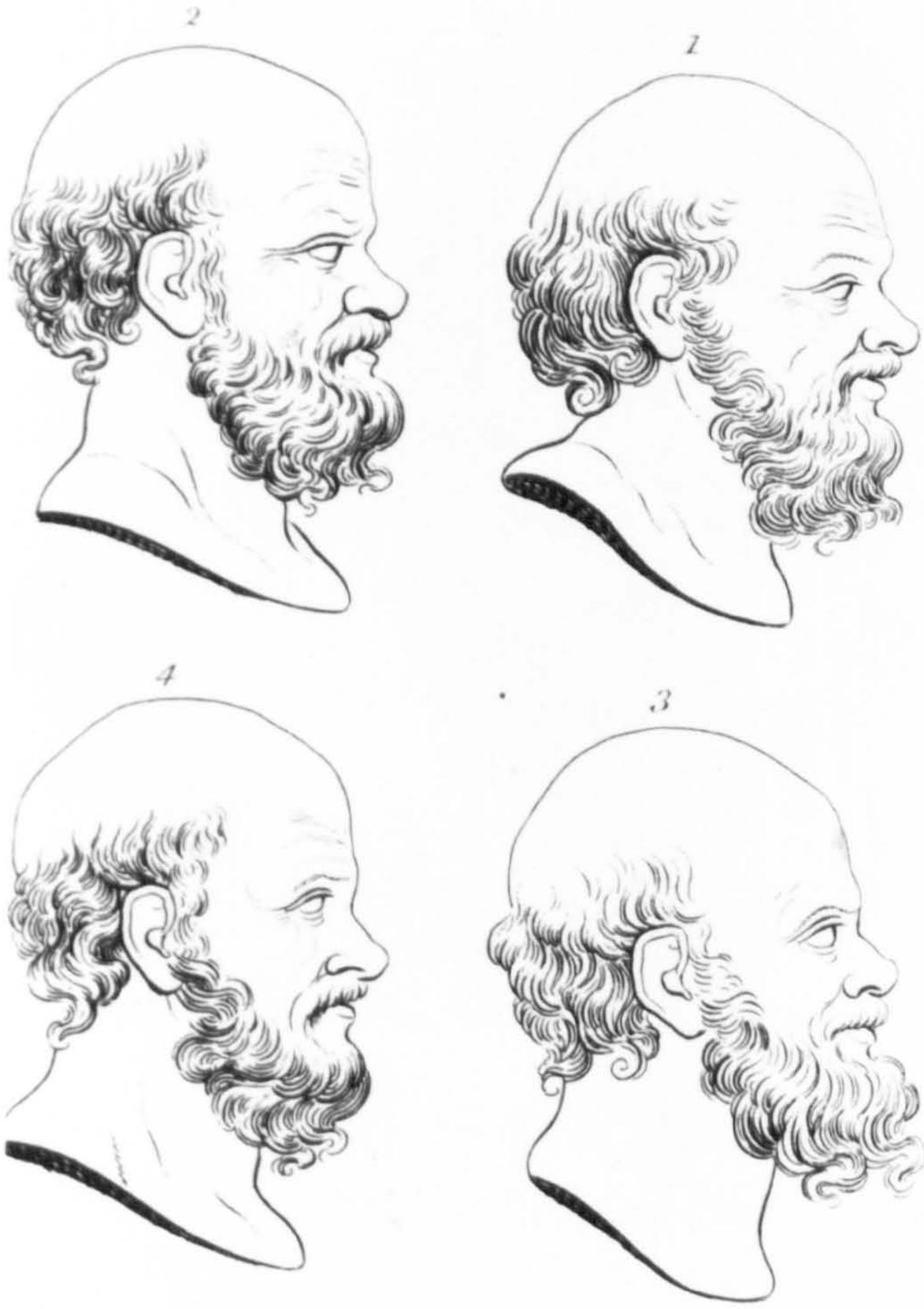


PLATE 13. Socrates as a Physiognomical Exercise (from Lavater, Essays on Physiognomy, 1789-1793)

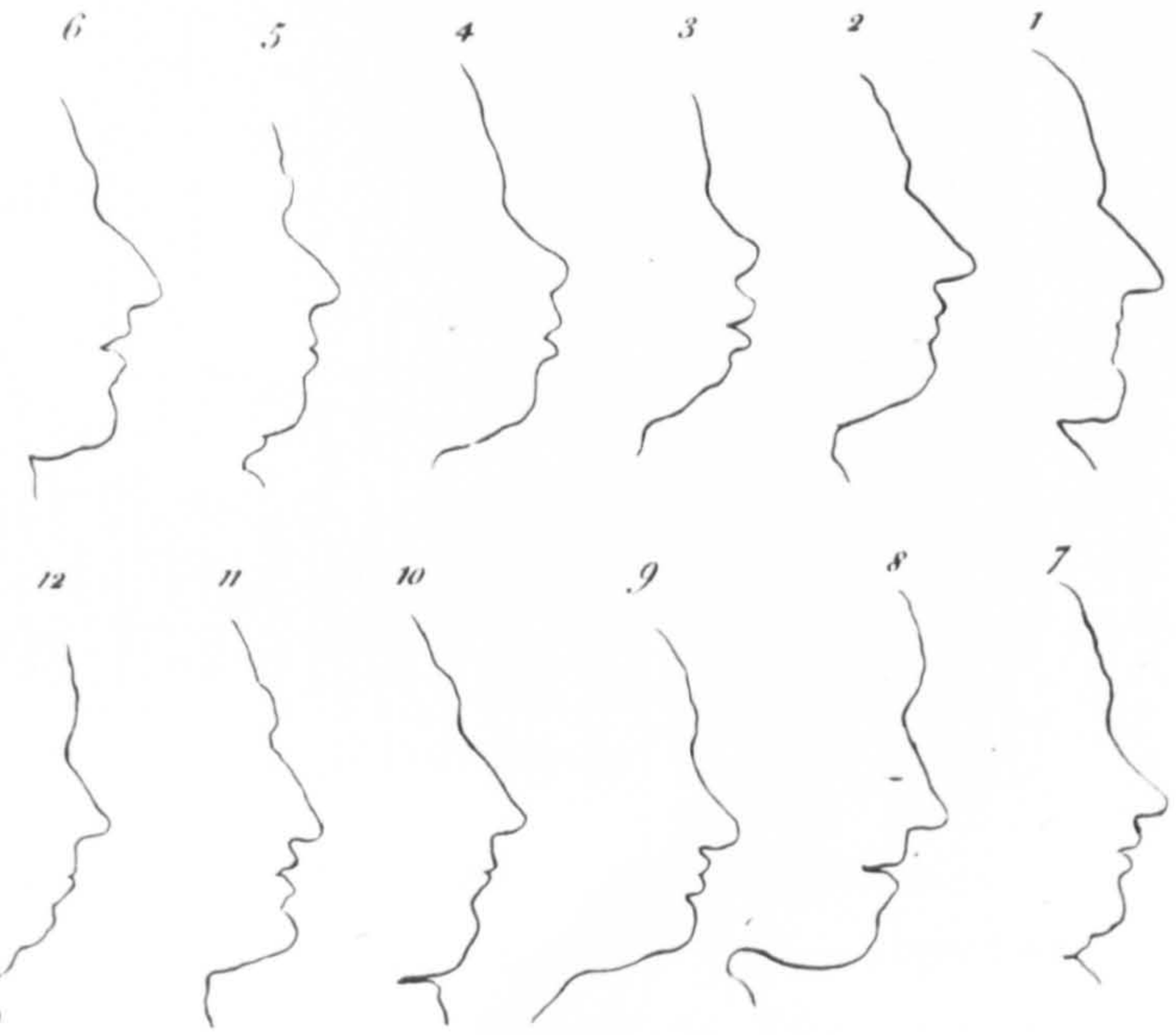


PLATE 13. Outlines (from Lavater, Essays on Physiognomy, 1789-1793)

PLATE 14. Studies by Lavater Redivivus (by R. Seymour, from Looking Glass, 21, September 1831)

PLATE 14. Pitt et le Roi de Suède (c. December 1805). This print probably relates to the abortive English plan for a campaign of English, Russian and Swedish forces in Hanover and Holland in Nov. 1805.

PLATE 15. Phrenological Illustrations or A Public Service (c. April 1824)

PLATE 15. Bumpology (George Cruikshank, February 1826). The phrenologist is J. de Ville who plied his trade in the Strand.

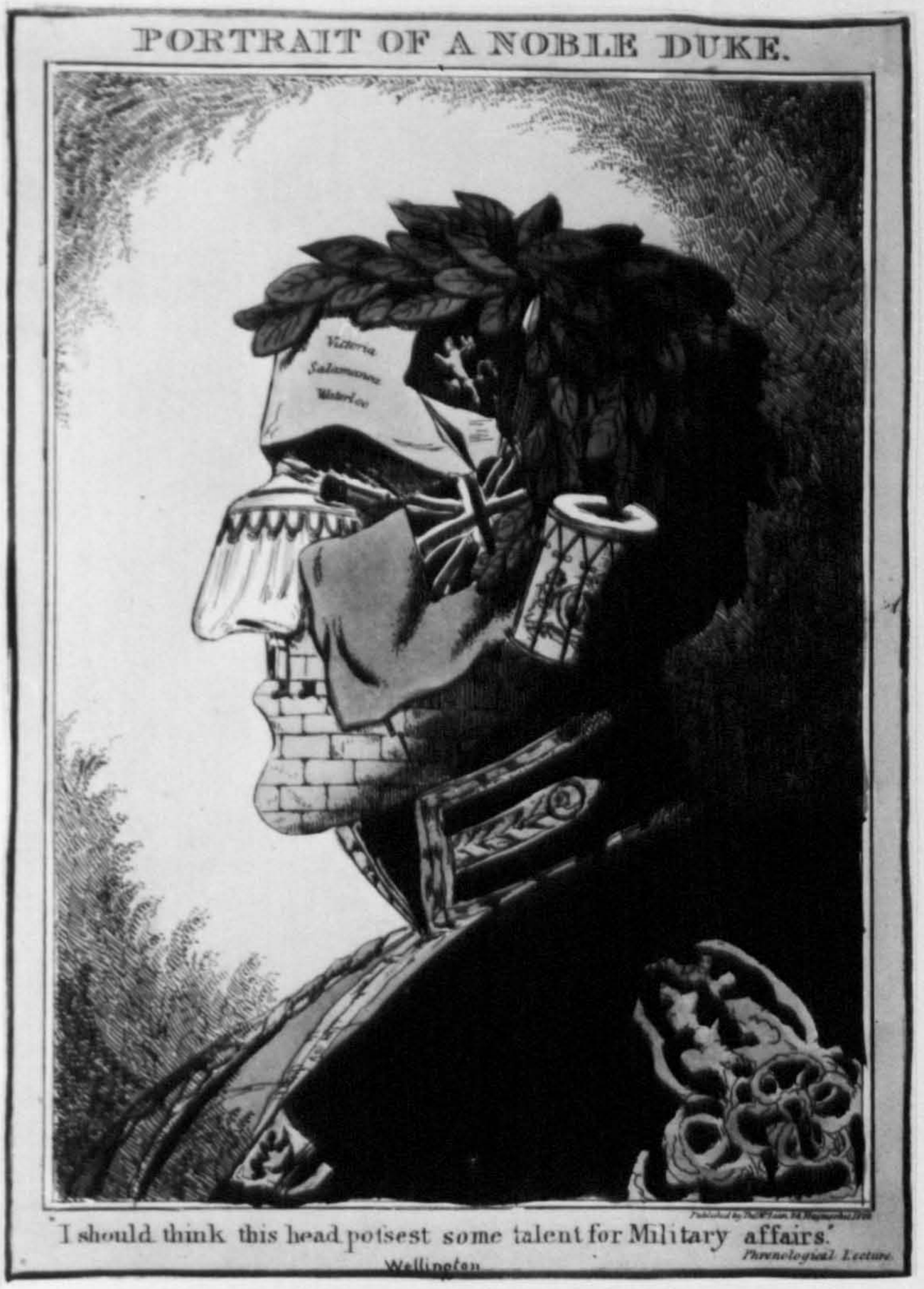


PLATE 16. Portrait of a Noble Duke (1829, c. March)

PLATE 16. Calves' Heads (September 1826). Note the Lavaters on the shelf, the Gall liquid, and the 'Spurzhim' bust.

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All books are published in London (if English) in Paris (if French) and in Berlin (if German) unless otherwise specified.

For reasons of economy the following abbreviations have had, unfortunately, to be employed:

BAAS: British Association for the Advancement of Science (Annual Reports listed under 'BAAS')

BHM: Bulletin of the History of Medicine

BJHS: British Journal of the History of Science

CR: Critical Review

DSB: Dictionary of Scientific Biography (editor-in-chief, C.C. Gillispie), 15 vols + index, New York, 1970-80

ER: Edinburgh Review

EJS: Edinburgh Journal of Science

GM: Gentleman's Magazine

HSPS: Historical Studies in the Physical Sciences

JHI: Journal of the History of Ideas

JPEP: Journal de physiologie expérimentale et pathologique

LUK/ NP: Library of Useful Knowledge/ Natural Philosophy

MR: Monthly Review

PA: Phrenological Almanac

PJ: Phrenological Journal

QR: Quarterly Review

TLSMS: The Literary and Statistical Magazine for Scotland

TZ: The Zoist

WR: Westminster Review

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