Papers and Originals

MEDICINE AND THE AFFECTIONS OF THE MIND*

BY

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When a man is chosen Harveian Orator it sets him thinking about his fitness for this signal honour, considering the notable roll of those who have had it before him and the quality and value of what they said. Many of his predecessors chose to speak of those problems in medicine which they had long pondered and which were the chief concern of their professional lives. Few have been psychiatrists—two in the last hundred years—and it seems, therefore, timely and suitable to my competence that I should speak particularly of those secrets of nature which lie behind the morbid affections of the mind.

In this College it is taken for granted that psychiatry has its place within the medical family—a wayward member perhaps, a prodigal who has taken his journey into a far country—but still one of the family. In spite of all differences in approach and subject-matter, the study and the care of psychological ills are as much a medical concern as is somatic disease. This seems obvious to us: but it has not always been obvious, nor outside this College is it everywhere conceded.

An Open Issue

In the Middle Ages and well into the seventeenth century abnormal conduct was often construed as due to demoniacal possession, witchcraft, and sorcery: consequently the clergy played a large part in dealing, by exorcism and otherwise, with those whose mental illness brought them under suspicion of traffic with the powers of evil. As late as Harvey's time the issue was still open. "It is a disease of the soul on which I am to treat," wrote the author[1] of the *Anatomy of Melancholy* in 1621, "and as much appertaining to a divine as to a physician." Conversely, Sir Thomas Browne[2] declared, "I can cure vices by physick when they remain incurable by divinity." While there was this uncertainty about the due province of physician and priest, many divines put out treatises on insanity and nervous affections which differed in emphasis rather than in substance from those of medical writers. So intertwined were medicine and religion that in 1634 Harvey himself was required by the King to direct a search for "devil's marks" on the bodies of four women who had been convicted of witchcraft in Lancashire.

There were some physicians contemporary with Harvey, and many in the generation that preceded him, who shared the general credulity regarding a diabolical origin for aberrations of conduct and belief: but the mental climate was changing. The change affected attitudes to rational explanation and scientific inquiry; it hardly touched treatment. During Harvey's two years at Padua the guides to practice were Dioscorides and Avicenna, Galen and Hippocrates[3]; all illness, mental and physical alike, was interpreted in terms of humoral mythology, and treatment was what it had been in the Middle Ages and before. But alongside this repose in the old ways there was a quickening, inquiring spirit, of which among universities Padua, and among doctors Harvey, were the great exemplars. A habit of mind was being cultivated which, in time, accustomed physicians to seek for natural causes and to give up deferring to past authority. It armoured them in the latter part of the seventeenth century against accepting too readily supernatural explanations of abnormal behaviour. And the contrast to which attention has been drawn,[4] between the critical penetration and brilliance of Harvey the scientist and the antique medicinal treatment used by Harvey the physician—this contrast reminds us that therapeutics has always had its own imperatives, more conservative at some times and more audacious at others than those of scientific inquiry; and that, in Harvey's day at any rate, treatment, whether of mental or physical illness, was irrational, unenlightened, and largely ineffective, depending greatly on what Sydenham called "the immense stock of much acclaimed medicines that we have so long been pestered with."

Moral Forces

What chiefly distinguished the treatment of the mentally ill then and later was the harshness which made their lot as degraded as that of the criminals with whom they were often herded in a common misery. But towards the end of the eighteenth century two powerful moral forces came to bear on psychiatry. The one, humanitarian in its impulse and as much lay as medical in its origins, strove with fluctuating success to put aside stripes, threats, and humiliations as ways of coping with abnormal behaviour and aimed to substitute for these established abuses a form of treatment which took account of the patients' claim on compassion and understanding, and their need of considerate regard for their feelings. The new regime concentrated on influences which would allay the harm done by environmental hurts and intemperate passions. Although the passions were held responsible for much mental disorder, it was not as evidence of moral obliquity that their excesses were viewed by the reformers but as signs and effects of misfortune. Sydenham[5] had put their standpoint a century earlier: "I conceive that there would be very little room left for charity, unless the misfortunes which the inconsiderate bring upon themselves by their own fault, were to be alleviated with humanity and tenderness. It belongs to God to punish the offence, but 'tis our duty to assist the distress'd, and relieve the diseased to the best of our power, and not to make too strict an inquiry into the cause of the evil, and irritate them by our censures."

Pinel and Chiarugi and Tuke were the standard-bearers of the movement for humane treatment; unlike in many ways, they had this essential in common, that they did not sit in moral judgment on the patients, nor treat outrageous and dissolute conduct as a culpable fall from grace.

There developed, however, almost concurrently, a school of medical thought, especially in Germany, which can also be called "moral": a school which insisted that mental disorder is a consequence of sin. "Madness," wrote George Man Burrows,[6] "is one of the curses imposed by the wrath of the Almighty on his people for their sins." Heinroth, and other psychiatrists who mini-

*Harveian Oration delivered to the Royal College of Physicians of London on October 18, 1963.

mized the physical causes of mental disorder, maintained that it was invariably the outcome of moral transgression, the voluntary pursuit of evil. From this Pelagian sort of psychopathology the conclusion was drawn that the patient's will must be curbed, his physical movements restricted by fetters, and coercion used, not capriciously but of set purpose, to bring the erring guilt-laden patient back to right conduct so that he will use his free will to keep clear of pride, greed, and other sins which are the prelude to insanity. Heinroth[7] even wanted to deny the mentally sick man who committed a crime that exemption from penalties which all societies have in varying degree allowed him because of his impaired judgment and self-control.

These moralistic vagaries of medical thinking, which could have ended by taking psychiatry out of medicine altogether, were countered by extremists of the somatic school, and as the century advanced the confused equation of sin and illness lost ground and came to be discredited as a mediaeval regression. The necropsy room and the microscope told about the pathology of many sorts of psychosis, and even neurotic and psychopathic disorder, in spite of the provoking symptoms displayed—moral insanity, as Prichard called it—nevertheless remained a medical problem, to be studied by the physiological and clinical approach of Charcot and others like him.

By the end of the nineteenth century, however, the concepts of virtue and mental health were again being interwoven by some influential exponents of psychotherapy, chief among them Dubois,[8] and there have been ample evidences since then that the medical view of mental illness is apt from time to time to be strongly tinctured with moral values which the physician imports into his assessment of the causes and nature of neurotic illness, in particular.

There are degrees of this propensity to moral judgments on patients. The majority of psychiatrists, aware that "no other specialty of medicine deals with diseases whose initial signs can be so easily confused with moral lapses," regard moral approbation or disapproval as irrelevant, medically speaking; they prefer to draw as firmly as they can the distinction between vice and illness, sin and morbid feelings of guilt. But there is a notable minority who still deny the distinction. They are not only psychiatrists: some psychologists, too, men of authority like Gordon Allport[9] and Hobart Mowrer,[10] believe that neuroses have a large element of sin in them, that they cannot be properly called illnesses, and that only through confession of past stupidities and errors, and attempts at restitution, can the neurotic sufferer hope for relief. However, these psychologists have a declared bias, and a low opinion of psychological medicine: "authority and power ought to go with demonstrated competence, which medicine clearly has in the physical realm, but equally clearly does not have in psychiatry."[10] Some psychiatrists, too, come disconcertingly close to this antimedical position; in their eyes mental symptoms are inextricably tied to the ethical context in which they develop, and it is misconceived and futile to attempt to solve what are really ethical and social problems by medical methods. Carrying the issue to an extreme, they characterize mental illness as a myth and allow the term "illness" only when the disabling mental symptoms arise from brain disease: all the rest is a matter of "problems in living."

So outright a rejection of customary medical theory and practice in regard to psychological anomalies provokes a strong dissent. But the persistence or revival of this train of thought in successive generations suggests that there is here a significant and possibly basic issue. It has arisen in the courts and in the schools of philosophy. Immanuel Kant[11] maintained that expert opinions as to the mental abnormality of people who had committed crimes should be obtained not from physicians but from philosophers; and it must be conceded that the debatable ground of free-will and moral responsibility with which courts are so often concerned is not an arena in which the psychiatrist is happy to be a gladiator. Nevertheless he is often called on, and often also has his *locus standi* questioned by social inquirers. A formidable critic of our forensic activities has lately said that she failed to discover "either in the records of court proceedings or in literature, any convincing demonstration that an intelligible distinction between psychopathy and wickedness can be drawn in terms of any meaningful concept of moral or criminal responsibility."[12]

Here we have then, in contemporary form and a particular context, a longstanding charge against us: psychological medicine is accused of exceeding its proper bounds, and confounding moral with medical considerations.

Proper Sphere of the Psychiatrist

What, then, is our proper sphere? The question is not one for psychiatry alone: it affects all medicine, for it turns on the concepts of health and disease. A robust demonstration of our ability to define these two concepts would either dispose of the psychiatric difficulty, *a fortiori*, or change it to a dispute about professional scope, a lowlier but more tangible issue.

Health has long been regarded as consisting in freedom from discomfort or disability and from objective disturbances of function. A strict interpretation of this definition has hardly been possible since it became clear that a pathological change can be insidiously present without producing discomfort or lessening capacity; and a further crux is afforded by lifelong non-progressive abnormalities, like pentosuria, which can be harmless. As long ago as the days of Aulus Gellius people disputed whether a man with a congenital weakness, or a eunuch, or a pregnant woman, could be called healthy. Their interest, it is true, was focused on economic and social implications such as the price to be paid for a slave in this condition, but the philosophers spotted the basic problem. When it comes to defining mental health and disease, including mental defect, the area of uncertainty broadens. Distress and disability alone are hardly sufficient criteria; for distress may be normal and healthy, as in mourning, and disability may depend on external conditions and attitudes towards aberrant behaviour, which vary from place to place. Many efforts at finding more durable criteria for mental illness have therefore been made, usually with a strong propensity towards letting social adaptation, or even social approval, serve the purpose. But if success in adapting to the demands of society is to be a criterion, the same man will be judged healthy in one country and ill in another. Anyone who has reflected on the many definitions of health, and of mental health in particular, will, I think, conclude that there is no consensus, and he will see that when moral or social values are invoked there are scarcely any limits to the behaviour which might be called morbid. Medical criteria are safer; that is, criteria essentially concerned with the integrity of physiological and psychological functions.

Evidently we cannot fix the due confines of psychiatry by allocating to it a strictly prescribed field. We can, however, agree that the practice of psychiatry should be limited to illness and its prevention, and that illness occurs broadly when there is disabling or distressing interference with normal function. But in the last thirty years the impatience and perhaps the credulity of public opinion

has pressed upon the psychiatrist requests that he treat people who are not ill and advise on problems that are not medical. It needs no logician to detect the fallacy in the syllogism which runs: psychiatrists are experts in mental disorder; mental disorder is a form of abnormal behaviour; therefore psychiatrists are experts in abnormal behaviour of every sort. Yet in matters touching on misbehaviour in children, vocational selection, troubles in marriage, crime, and many other tribulations, the psychiatrist has sometimes assumed responsibility, or had responsibility thrust upon him, beyond the range of his medical functions; and this has led him into a predicament in which he hears it said, in tones shrill with disappointment or mordant with derision, that he can give no useful service at all in matters of human conduct. Unwarranted detraction is as damaging as overweening aims. Psychiatry has suffered from both. There is no other branch of medicine which finds it so difficult to say "no"; and is so often blamed when it says "yes."

Lord Adrian[13] has recently stated the temperate, rather generous view of this matter: "now it is certainly the province of the doctor to detect and, if possible, to remedy the organic defects which may distort the personality and, if he can, to unravel the emotional web which may be leading to neurosis or crime. But this does not mean that we ought to shoulder the whole responsibility for producing agreeable and useful citizens. Training the mind to stand up to all the hostile experiences of childhood and adult life involves problems outside the sphere of organic or of psychological medicine, problems for parents and teachers and for the society which has set the standards of behaviour."

Doctor's Role

In our kind of society—and indeed in many societies very different from ours—the doctor's role is determined not only by the problems of ill-health upon which he is expected to use his skill, but also by the methods he is supposed to employ, the ethical and social obligations he assumes, and the privileges conceded to him. To-day the privileges are many, the obligations correspondingly heavy; and the methods those of scientific inquiry reinforced by clinical experience and empirical art. They do not include passing moral judgment on his patients, nor taking political action for the better ordering of society. The doctor, of course, exercises moral judgment and takes political action as every other citizen does, but it is not part of his medical approach to his patients' disabilities to decide whether they are ethically good or bad.

If a child with behaviour-disorder is referred for medical help it is tacitly assumed that the methods of investigation and treatment will be mainly derived from the doctor's scientific training, and will, within the limits of present-day knowledge, be rational and specialized: specialized, that is, in so far as they will not be those of the teacher, the clergyman, the magistrate, or the educational psychologist—all of them people with a respected professional role and a discipline of their own to which their methods conform—but will be those of the doctor. If the psychiatrist steps out of his medical role and uses the methods of the clergyman, say, or the magistrate, he is in a small way infringing his implicit contract with society: a venial infringement, since his object is the betterment of the child's mental state, but an infringement of the sort which, greatly multiplied, brings on his collective head the reproach of exceeding his powers.

What is true of the psychiatrist's dealings with a disturbed child applies to many of his other practical activities in diagnosis and treatment. But besides diagnosis and treatment there is research and experiment. Here no such restrictive covenant can be implied. The doctor, as Harvey said, shall search out and study the secrets of nature; he has in the exercise of his clinical functions special opportunities for observation and insight; and he is free to use whatever methods seem appropriate and justified. He would, on the other hand, be guilty of a monopolizing and stupid hubris if he claimed that he alone can study and elucidate the phenomena of illness. The doctor's debts to the physiologist, the biochemist, the pathologist, the pharmacologist, are the largest part of the history of medical progress: and in the case of the psychiatrist there is a debt to psychologists also.

It is beyond dispute that whoever can advance knowledge of the problems inherent in human conduct and increase the means of remedying its defects must be given maximum opportunities for doing so. If any group of people were capable of relieving some form of illness better than the doctor can, they would be entrusted with its treatment, once their superiority had been demonstrated. But when comparable situations have occurred in the past, recognized deficiencies in medical education were presently made good, so that doctors acquired the therapeutic skill and knowledge that previous generations had lacked. It would probably be so in psychiatry. It seems unlikely that the doctor will be displaced from his traditional role in dealing with mental illness, any more than in other branches of medicine.

Medical Standing of Psychiatry

Fortified and transmuted by scientific advances of many kinds, medicine has shifted its areas of concern. The environmental causes of disease receive more attention; chronic and mental anomalies move closer to the centre of the stage; and psychology, with other sciences of behaviour, takes its place alongside the sciences long accepted as basic to medicine, though it is admittedly unequal to them in maturity, assurance, and exactitude. Psychiatry is at some disadvantage because its technical language sounds obscure and sometimes a trifle absurd in medical ears, its therapeutic achievements are still a subject of controversy, and its most characteristic means of investigation and treatment is talk—the clinical interview. These are not serious handicaps, nor are the first two peculiar to psychiatry; and it has many successes and advances to set against them. But the medical standing of psychiatry is sometimes more darkly overcast by those psychiatrists who belittle diagnosis as futile labelling, and who hold that treatment is to be judged successful by its effect on the freedom of the patient's personality and on his self-realization, rather than by whether he has become free from symptoms. Such departures from the ways and discipline of clinical medicine recall the disputes between the School of Cnidus and the School of Cos, long ago at the dawn of scientific medicine.

It is often said that psychiatry has had three revolutions—the first when humane measures and natural explanations replaced neglect, harsh repression, and animistic myths; the second, at the end of the nineteenth century, when Freud introduced a dynamic theory of human motives and conflicts; and the third, in our own time, when the assumption that the best treatment is individual treatment, preferably in hospital, has been dethroned in favour of community care, reinforced by group therapy, and sustained by newly synthesized drugs. This is too simple and too sweeping. The changes in our day have been notable, but hardly revolutionary: entrenched ideas have

not been overthrown, power has not passed into new hands, opinion has swerved and wobbled rather than taken a new course. Many of the changes now in evidence have had precursors. In the forties of the last century there was a strong movement towards giving patients in mental hospitals maximal freedom to come and go, avoiding locked doors and imposed discipline, discussing with them their emotional and social difficulties, assisting them to resume family life as soon as possible; to-day we have a revived emphasis on these things which we describe as milieu therapy, the open-door policy, the therapeutic community, and rehabilitation. Our approach is more sophisticated and self-conscious; we use more systematic measures and more trained collaborators; we apply the findings of recent research: but in the main we tread closely in the footsteps of our predecessors of a century ago.

Scientific Status of Psychiatry

There have likewise been periods which resembled our own in that some voices appealed for maximum objectivity in psychiatry, to be attained through measurement, systematic observation, and experiment, as in the natural sciences, while others cried down such strivings and maintained that objectivity in these matters can be achieved only at the cost of mummifying the mind, and sealing up the essential phenomena in so many canopic jars—tidy, docketed, and dead. This recurring dispute raises the vexed question of the scientific status of psychiatry.

Some would put this question aside as one of no importance except in the eyes of those who want to acquire for psychiatry the prestige that attaches to scientific pursuits. But the question is surely relevant and inescapable if we are considering the place of psychiatry in the household of modern medicine. The scientific method is not the only instrument for discovering truth, but it has proved so powerful that bringing it fully and appropriately to bear, studying the secrets of nature by way of experiment, offers the best promise of increasing our knowledge of mental illness. It is clearly mistaken to restrict the scientific method to that employed in the physical sciences: the biological sciences, and the sciences variously called "social" and "behavioural," have developed their own methods. In all these fields progress has been the outcome of controlled experiment, close observation, imaginative concepts, and restrained intuition: have these methods and qualities of the inquiring mind been deployed on the problems of psychiatry?

So far as it draws upon the common fund of medical knowledge and the biological sciences basic to medicine, its scientific pretensions are relatively assured. It rests more and more upon such knowledge. But there remain large tracts of psychiatric experience in which little benefit has so far been derived from application of the methods and findings of these basic disciplines. Not that speculation has been stilled or research proscribed: but the problems are of a nature which makes them—or seems at present to make them—insusceptible of resolution by these means. To cope with such problems psychiatry has recourse to the comparatively young, tentative, but vigorous and expanding sciences which deal with behaviour and the interplay between man and the cultural environment in which he lives. They have no clear boundaries; they are still a long way, as Waddington[14] recently put it, "from formulating for their field any principle as clear cut and incontrovertible as the principle of natural selection is in the biological realm," and they cannot yet in all their operations observe the rigour, nor hope for the consistency in their picture of the world of psychological and social phenomena, that has been attained in the world of the physical sciences. Nevertheless, the debt of psychiatry to these "behavioural" sciences is increasing, partly because of the direct application of pyschological and social findings, but more through borrowing—and exchanging—methods for joint investigation, as by the so-called multidisciplinary team.

Dynamic Psychopathology

The increment of knowledge that comes from this will meet scientific standards well enough. There is, however, a body of theory that psychiatrists draw on heavily for the interpretation and the treatment of mental disorder, but which falls short of meeting such standards. This is dynamic psychopathology, which serves to explain abnormal conduct and to steer its treatment. It is elaborate, intricate, and apt for every contingency. Yet comprehensive explanatory systems have been suspect in medicine, for good historical and epistemological reasons. We no longer feel disposed to embrace a set of related hypotheses, however illuminating and attractive, because we can collect many observations that confirm them: the grammar of science now dwells instead on refutation, whereby error can be detected and purged. Unless a generalization is stated in such terms that it can be tested and possibly falsified it may serve pragmatic ends but it is hardly a scientific hypothesis. Here dynamic psychopathology as we have known it largely falls short. It has a number of tenets stated in such a way that they could not be refuted; whatever evidence has been brought forward by experiment, criticism, or uncontrolled observation to falsify them, an alternative explanation or a recast phrasing served to reinstate the apparently refuted hypothesis.

This detracts from the scientific standing of psychiatry; but of course it does not mean that a clean sweep can or should be made of current psychopathology. Valuable concepts, penetrating and rightly discerned, may have to be expressed at a given time in language which poorly meets the need for refutable predictions. As technological advances are made, the available language for communication and testing becomes more serviceable, and the concepts and hypotheses may be found valid. The importance of technological developments in all this is obvious: without the microscope Harvey himself could only conjecture about how the blood passed from the arterioles to the venules. The techniques available to the social sciences, such as the questionary and the interview, are at the pre-microscope stage. With better techniques of investigation and concomitant refining of central concepts (such as instinct), the loose tissue of psychopathology will doubtless be rewoven by degrees and made of more lasting stuff—always assuming, as we are entitled to, that society will afford the right facilities and that the prepared mind and alert observation of men of exceptional capacity will be forthcoming for the task.

A Tempting Approach

It is tempting for a psychiatrist who has lived through the last four decades, with their legitimate record of progress in his subject, to dilate upon this and extol our recent achievements. A leading teacher of psychiatry,[15] for example, declared two years ago, "for those who can accept this newer viewpoint, psychiatric illness becomes hugely and splendidly treatable. . . . For it is now accepted, not as an act of faith but as something clearly demonstrated, that there can be effective intervention in mental illness. . . . To-day most psychiatric patients are

cured . . . no one doubts the efficacy of psychiatric treatment." And it is not only from psychiatrists that such paeans come. The President of the United States,[16] in his message to Congress in February this year, spoke of inaugurating "a wholly new emphasis and approach to care for the mentally ill. This approach relies primarily upon the new knowledge and new drugs acquired and developed in recent years which make it possible for most of the mentally ill to be successfully and quickly treated in their own communities and returned to a useful place in society. These breakthroughs have rendered obsolete the traditional methods of treatment which imposed upon the mentally ill a social quarantine. . . ." Alas, these are exaggerated claims; any readiness to echo them is chastened by remembering how often physicians have supposed their own era to be one of momentous and unprecedented enlightenment. Osler,[17] for example, in 1902, acclaimed in exultant language "the colossal advance of the past fifty years: . . . never has the outlook for the profession been brighter." Psychiatrists too have in the past congratulated themselves prematurely on major advances: indeed, the Harveian Orator in 1863,[18] himself a psychiatrist and the son of a psychiatrist, extolled the striking therapeutic advances in the cure of the insane made in his own and his father's day—advances which we must dismiss as nugatory.

It is as well, therefore, for us psychiatrists to try to keep a balance between wishful enthusiasm and sceptical judgment. We are not living through a period that marks a new epoch: there is no Galileo or Darwin, no Harvey or Newton, in psychiatry and psychology: nor—to put our aspirations on a more realistic plane—have there been discoveries during the last twenty years comparable to those that have signalized the growth of therapeutics and surgery in other medical fields. Psychiatric advances have been less dramatic and less conclusive. Still, to those who have taken part in them, they have given the satisfaction and excited the hopes out of which enthusiasm is generated. Sceptical judgment is a rarer attribute, especially among those who listen to assurances that new drugs are specific and powerful, that psychotherapy is at its zenith, and that doubt is a clogging weakness.

To assess current trends and problems in psychiatry is more than a contemporary can trust himself to do impartially or within the compass of a lecture; but there are some matters which claim much attention, and they can be briefly stated.

Origins of Mental Disorder

Successive generations of close observers have laboured to record the origins and aspect of mental disorder. Here doctors have done most, since they have seen most: but dramatists, novelists, historians, and biographers have brought subtle perception to bear on the inwardness of morbid experience and the springs of morbid conduct. In this century psychiatrists, influenced by the minute scrutiny of detail in psychoanalysis and by the exemplary thoroughness of the best German and French psychiatric descriptions, have diligently tried to set out the panorama of symptoms in mental disorder, coextensive with the infinitely varied picture of normal behaviour. Symptomatology is therefore a highly developed aspect of psychiatry —bewildering, as any minute study of human conduct and feelings is apt to be, but rich and instructive, in its tangled diversity. It has been the fashion, where the dynamic forces in psychopathology were the centre of attention, to belittle description, calling it superficial, and to use "descriptive psychiatry" as a term of disparagement. Such a view takes for granted our knowledge of the forces that lie behind symptoms and appearances. It ignores the corrective power of direct observation, which can save dynamic psychopathology from its ever-present danger of mistaking metaphor for explanation, and giving to airy nothing a local habitation and a name.

Psychiatrists, like other people, used to look for single causes for single diseases: ideas about aetiology were therefore simple, one-eyed, and usually wrong. Now, seeing causation as a mesh of interacting forces, we are less ingenuous and less comfortable. Where hereditary influences and chromosome anomalies are prepotent in determining the form and the course of a mental abnormality, the problems of aetiology may be no more abstruse than those of alkaptonuria or retinitis pigmentosa; abstruse enough, even so. Where the onslaught of an adverse environment has been brutal or prolonged—an injury to the brain, for example, or an embittered denial of affection, trust, and opportunity—the aetiological problem may again, in its essentials, be like that of a broken femur or beriberi. Always individual responses will colour the clinical picture, and the individual environment will fashion the outcome, even in such relatively simple sequences as these; but in the main they are among the less obscure aetiological issues in psychiatry.

But when it comes to asking how plastic a human being's mental constitution is at various phases of his life; how far training, and particular misfortunes, and physical events will mould and modify his personality; what characters are stamped in for good, and what can be reversed by such and such education, social influences, or chances of personal relationship: to questions such as these some psychiatrists are prepared to offer an answer, depending in substance and fullness on their doctrinal standpoint as well as on their experience and temperament. But to others, on sober review, such questions seem still largely unanswered. The driving forces of human conduct, shaping our minds for good or ill, are recondite; and though everybody forms opinions and working hypotheses on these matters many psychiatrists, on reflection, are ready to admit to much uncertainty and ignorance.

If we knew the answers to these questions, which men have been asking from time immemorial, then we should have moved a long way towards knowing not only how to prevent psychopathy but also how to bring up children and shape their personality along predetermined lines. It may be that such knowledge would put strength into the hands of those who want to mould men's minds into one pattern, and that it would augur ill for the future of that questing, free, adventurous quality of mind out of which the great human achievements have been born. If so, the dilemma will be no less fateful than that with which the progress of applied nuclear physics has confronted us. It seems, however, a good deal further away. But it is a reminder that, however firmly we concentrate our gaze, as we should, on the medical aspect of our patients' behaviour, we are still obliged to regard our own behaviour from another standpoint, since moral issues are there inescapable. Psychiatrists have no wish to be "straighteners" who act, like medicine men in primitive communities, as the agents of organized society in getting "deviants" to conform. If society asks psychiatrists to do this, with "psychopathic disorder" as the thin end of the wedge, it may be predicted that they will refuse.

Pathology of Mental Disorder

The pathology of mental disorder was until lately divisible into pathology, as the term is ordinarily under-

stood in medicine, and psychopathology. The division is wearing thin, but will not disappear so long as pathology depends closely on direct observation and experiment while psychopathology has a vast inferential superstructure, reared on a quivering raft of observation.

The somatic pathology of mental disorder is well illuminated in those conditions in which the mental disturbance is invariably associated with abnormal structural or chemical changes, of which it is a symptom; it is less clear when there are metabolic anomalies or fluctuations which are unspecific; and it is a very dark chamber, lit from time to time with tantalizing flashes, in the numerous "functional" disorders. Schizophrenia is the outstanding instance of unremitting biochemical exploration, rewarded as yet with little harvest, but with much to suggest that the search will eventually succeed. In another area an inference about pathology can be drawn from the association between late effects of encephalitis and obsessional, hysterical, and sexual disturbances. More and more is being learned about the representation in central structures of psychological drives and states of awareness—for example, the mechanisms in the hypothalamus which control feeding behaviour, the activating role of the reticular formation in determining wakefulness, the oestrogen-sensitive neurones in the diencephalon which affect sexual behaviour. But it is a very far cry from such findings to a satisfying patho-physiology of "non-organic" mental disorder. In any case such a patho-physiology will be yoked with a patho-psychology: the correlations that are now being discovered for the most part assume a double-aspect theory of brain and mind, or a psycho-physical parallelism—ultimately, no doubt, to be superseded.

We are still unable to speak intelligibly about the pathology of mental disorder except in two languages—the somatic and the psychological. The second of these—the language of psychopathology—has many dialects: too many for comfort. Most prevalent are those derived from psychoanalysis; most systematic those of the psychiatrist turned philosopher, like Karl Jaspers.[19] Less orderly and less crystallized but most promising are those which express, however haltingly, the linkage between the concepts of the physiologist, the experimental psychologist, and the sociologist, and which draw on the vernacular of studies as apparently diverse as those of animal behaviour, cognitive development, neural function, communication, and social transaction.

The dependence of the majority of psychiatrists upon Freudian psychopathology recalls the dominance of systems in medicine in the eighteenth century. This is not the occasion to review the grounds on which some accept psychoanalysis as a durable approximation to the truth, unrivalled in explanatory power, and comparable with the discoveries of Copernicus and Darwin, whereas others, like Karl Popper, regard it as a pre-scientific metaphysical scheme, and while they concede its explanatory power, deplore this as a fundamental weakness: the study of such theories, wrote Popper,[20] "seemed to have the effect of an intellectual conversion or revelation, opening your eyes to a new truth hidden from those not yet initiated. Once your eyes were thus opened, you saw new confirming instances everywhere: the world was full of verifications of the theory. Whatever happened always confirmed it. Thus its truth appeared manifest."

Between these opposed judgments is a large body of indeterminate opinion, well aware of the great influence Freud's suggestions and conclusions have had upon Western thought, and well aware that some of his theory will endure, but unsure where the dividing line will eventually be drawn between premature synthesis and perceptive insight, between myth and model. Although psychoanalysis has been before the world, in developing guise, for more than half a century, it has not attained a stable resting point: the involvement of psychoanalysis as a theoretical system with psychoanalysis as a method of treatment, and with psychoanalysis as a method of exploration, has further clouded the picture. In such a situation the contemporary psychiatrist who is not a psychoanalyst can only pay it his tribute of wary respect and qualified gratitude, while he recognizes that the opinions expressed in the writings of leading psychoanalysts are dissonant, and that separating the wheat from the tares in this well-ploughed field has so far baffled many a reaper. Among psychoanalysts there are now people who recognize that the theory of psychoanalysis is in flux because the gap between observations and inferences has been too wide, formulations too vague, and the findings of other disciplines overlooked or treated with a selective bias. There seems much to encourage the view that a process of methodological cleansing is in train.

There are also the forms of psychopathology based on learning theory, or on conditioning and "higher nervous activity": these are being developed *pari passu* with the psychological and physiological studies of the normal from which they derive. More abstruse and baffling is the form of psychopathology which draws its inspiration from existential philosophy, chiefly as Heidegger presented it, and which exalts subjectivity.

Obviously the number of diverse systems of psychopathology speaks against the survival of most of them as admissible elements in a medical discipline; they may merge, since at bottom they have more in common with one another than they have discrepancies, once their language has been pruned and translated into a plainer idiom.

Prevention

Our growing knowledge of prevention is more closely indebted to aetiology than to psychopathology. The area of direct prevention has expanded in the proportion that mental illness has been found to be dependent on avoidable or remediable somatic damage. There are, furthermore, the conditions for which heredity is partly responsible—for example, schizophrenia and manic-depressive psychosis—or is wholly responsible—for example, amaurotic idiocy, phenylketonuria, and Huntington's chorea. A significant but less definable and less certain group of preventable disorders derives not from malnutrition and other physical deficiencies and trauma but from deprivation of what seem biosocial essentials for normal mental development—affection, stimulation, protection, a dependable and consistent human environment.

Whether we regard the somatic or the psychological privations and noxae which contribute to mental morbidity, the means of prevention will be in part social. If society provided better obstetrical and prenatal care the incidence of defect through prematurity, birth-injury, anoxia, and other perinatal damage might be reduced; and better conditions for the upbringing of children might lessen the chances of mental abnormality. No one can at present dogmatize on this matter; but it is clear that even when we know enough to specify the requisites for healthy mental development there will be need also for social action, and suitable public education, to get these requisites supplied.

Besides prevention through removal of major causes, there is the secondary sort of prevention which is effected by giving appropriate treatment to arrest or repair the

damage done by disease. The alcoholic may be turned aside from the course which would lead to an encephalopathy or delirium; the schizophrenic may be so cared for that he has no chance to accommodate himself to a dependent, sterile, isolated way of life or to surrender the links with his family and occupation which would promote his mental health. What can be achieved depends not only on the nature of the illness and our ability to curtail or abate it by treatment, but also on the desires of the patient and his relatives, and the attitudes prevailing in society at large. The present drive to substitute community care for hospital care assumes that healthy people will understand the plight of the mentally disordered and can help them to become normal again: a legitimate assumption but unproved. Moreover, attempts to better people's knowledge and attitudes to mental illness by education and propaganda have not been quickly successful, or in some respects successful at all.

The office of medicine, said Bacon,[21] is to "tune this curious harp of man's body, and to reduce it to harmony." And the physician, he went on, "hath no particular act demonstrative of his ability, but is judged most by the event; which is ever but as it is taken; for who can tell, if a patient die or recover . . . whether it be art or accident." Something of this is the case with medicine still, and with psychiatry in particular. The increase in our therapeutic powers has been considerable, and is judged by the event; unfortunately it is sometimes uncertain whether the treatment caused the outcome. Some methods are of great and unquestioned value, indispensable even to those who deplore their overuse; other methods, once high in favour, are dying out; and a few are vigorously championed by their partisans while other psychiatrists declare them grossly overrated. The method which is beyond all others manifestly effective is an empirical one; the most widely used methods—drugs and psychotherapy—still await the verdict that will follow dispassionate and controlled trial. The improvement in collective results that has taken place during the last thirty years is attributable not only to technical advances but also to the social changes in psychiatric hospitals and the concomitant changes in the minds and practice of those who work in them.

Research and Education

From one standpoint the progress of psychiatry has been substantial and heartening: from another, there is a painful disproportion between the limited growth in our knowledge and the vast tracts of human distress which we still cannot account for or remove. Such a situation, in any branch of medicine, demands scrutiny of the influences and resources on which progress has depended in the recent past; and it invites speculation about the areas of psychiatric research and education where a more bountiful yield may be expected.

Medical education has an obvious place in the forefront of such scrutiny. We have lately had a thoughtful survey[22] of how medical students are taught psychiatry in the United States: much time is devoted to the subject there; it is taken very seriously, as though equal in importance to medicine, surgery, and obstetrics; and it has, in the last two decades, put most of its eggs in the psychodynamic or psychoanalytic basket. The results, surveyed by experienced American observers—or by the visitor—warrant only partial imitation. In the most recently published commentary a distinguished American teacher, himself a leading psychoanalyst[23] and not given to extravagant language, says that "of all the subjects that the intern has been exposed to as a medical student he shows the greatest ignorance in the field of psychiatry . . . our medical graduates show what amounts to an almost universal ignorance of basic psychiatry upon graduation"; and he says that it has been his experience, examining candidates for specialist accreditation by the American Board, that many of them "do not seem to know how to examine a patient; that their so-called psychoanalytic orientation is a matter of utter confusion; that there is a mish-mash of vague conceptualizations—arising from many different sources—that passes for so-called psychodynamic psychiatry." Such a verdict pillories the defects but overlooks the merits of American psychiatric education—its boldness in experiment, its zest for self-criticism, its enthusiasm, its receptive alertness to new ideas.

It is not for us, struggling and beset with problems, to behold the mote that is in our brother's eye while considering not the beam that is in our own. Hitherto in this country the direct clinical experience gained by clerking on psychiatrically abnormal patients has been too little, or too little supervised; or it has been too fortuitous in so far as it was uncertain whether the student, during the relatively short period spent in this way, would encounter a sufficient variety of disorders to make him at ease when examining such patients and enable him to acquire the broad principles of causation and psychopathology, and the rudiments of treatment.

The rudiments of treatment: even that will be too much, in the opinion of some; to others it will seem far too little. The dispute turns, of course, on the amount of psychological treatment that should be taught; physical methods will have the same sort of coverage and range as treatment in other branches of medicine, but psychotherapy has pitfalls and requirements peculiar to itself. Moreover, as Neal Miller[24] and others have pointed out, "there is distressingly little rigorous proof that the average improvement of treated patients [by psychotherapy] is better than the spontaneous improvement of untreated ones." This is hardly the pabulum for beginners. There is no evidence, from countries where medical students are introduced to active psychotherapy and encouraged to try their prentice hand, that they are, on the average, better doctors thereafter in dealing with their patients' psychological problems, open or covert, than if they had not had this early exposure to the elements. An analogy may be drawn with surgery: students do not operate and are not taught to operate. It is a postgraduate study, except on a very minor scale.

Staple Elements of Teaching

Close study of the phenomena of mental disorder, appraisal of evident causes, inferences about pathology, balanced consideration of prognosis—these are the preliminaries and the staple elements in the teaching of psychiatry to medical students. The students require a grasp and familiarity which will serve as the foundation on which treatment can be built at a relatively late stage. The medical student is being educated, rather than vocationally trained; and his education, at this stage of his life, will hardly be furthered by plunging him into the turmoil of psychological treatment, and getting him to engross himself in unravelling the emotional relationship of his patients to him and his to them.

Undergraduate education opens the way to postgraduate psychiatric studies, as specialist or investigator. Systematic and comprehensive teaching, fostered by the universities, is increasingly available to replace or supplement the once universal training by apprenticeship in mental hospitals. Besides those who intend to practise this specialty, general

practitioners and public health doctors ask for appropriate postgraduate teaching.

There are also those non-medical investigators who are inquiring into some psychiatric matter and need a better acquaintance with the phenomena and problems of mental disorder than they can pick up as they go along. These are the converse of the psychiatrists who need further training in a particular scientific discipline in order to carry out clinical research. The Medical Research Council has here played a major part in facilitating the further education of those who will chiefly advance our knowledge. They work for the most part in universities and research units: and it is through the universities and the Medical Research Council (reinforced by the big foundations) that the development of psychiatry as a living branch of scientific medicine has been mainly brought about in this country. This is not to disparage the contribution of the mental hospitals.

Support for Research

It is sometimes said that the pace of psychiatric research has been too slow, the financial support too meagre, and that there are many able men, eager to engage in research, who are denied the means. It is not a contention that can easily be put to the proof. It is, however, reasonably certain that there is no bias against the furtherance of research into psychiatric problems: good will, rather, and eagerness to help. Psychiatry needs more money for research (including the buildings to house research), but it needs it on much the same grounds, and probably to much the same extent, as medical research as a whole needs more than it at present gets. The barrier to conspicuous advance in psychiatry has not been stinginess and prejudice on the part of those who decide whether a research project submitted to them should live or die; nor has it been lack of ability among those who are engaged in psychiatric research: it lies in the inherent toughness of the problems. "The subtlety of the subject," said an earlier authority, "doth cause large possibility, and easy failing."

As to the flow of suitable workers: the number of able people who come into psychiatry and occupy themselves with its problems has been steadily rising. The day may be fairly near when psychiatrists in academic posts can echo Billroth's[25] two-edged compliment to German medicine: "I do not doubt that if we professors were all to die at once to-day, we should be replaced immediately, and so ably that the development of science would not be halted for a moment." Who knows, it might be hastened.

If there had been seeming discrimination against psychiatric research, it would very likely have been concentrated on those areas which, in postulates and method, are least able to satisfy the criteria which prevail in the physical and biological sciences. That the sciences concerned with behaviour and social relations were for long given stepchild treatment in our universities is common knowledge: whether liberal support for research in these sciences would have yielded results of a kind applicable to research in psychiatry is harder to say, but probable. An economist,[26] dismayed at the misuse and diversion of intellectual resources, has recently put the dilemma bluntly: "Our major problems lie in the field of social systems: our major intellectual resource is still being devoted towards physical and biological systems." But he does not maintain that, besides the unstinted support of good work in the social sciences for which he pleads, liberal assistance should also be given to weak projects and dubious programmes because the demands are so urgent and the hour is so late. The patent misery and the losses entailed by psychological disorder and social mischief naturally evoke loud calls for bolder measures of investigation and remedy. It is to be hoped that these demands will be met by much-increased aid and sustenance for the social sciences, by the encouragement of clinical research in psychiatry, and by boldly concentrating resources on those who can make good use of them, rather than by adopting a kindly but reckless bread-on-the-waters policy.

Psychiatric Problems

Many impersonal forces affect the direction of psychiatric inquiry and promote its spread. A trenchant example is afforded by the political changes in the world which have lately obliged people of emergent nations to adjust themselves to rapidly changing culture, new values, and unfamiliar material conditions. Such a situation raises psychiatric problems of an absorbing kind. Comparative study of the forms, causes, and course of mental disorder in different ethnic groups has been a subject of intermittent, languid inquiry since the latter part of the last century; but in the last two decades external events have directed research more energetically into this obscure, potentially rich area of inquiry. The recent survey of the Yoruba by Leighton and Lambo[27] is an informative study of the relation between a community's degree of social integration and the amount of mental ill-health in it: it demonstrates how indispensable for such studies are the techniques and theoretical equipment of the anthropologist and the sociologist as well as of the psychiatrist. Psychiatry borrows with laudable impartiality from many disciplines, and it cannot be gainsaid that the bulk of psychiatric discovery has been the product of assiduous cross-fertilization.

When we turn from factors that have brought about increase in psychiatric knowledge to those that have hampered it we may recall Allan Gregg's[28] summary: "The three most powerful traditions of psychiatry are still, as they have been from time immemorial, the horror which mental disease inspires, the power and subtlety with which psychiatric symptoms influence human relations, and the tendency of man to think of spirit as not only separable but already separate from body. These are the inherent, the inveterate, the inevitable handicaps of psychiatry." The third of these, the relation of mind and body, is indeed an ancient and obstinate difficulty. Cartesian dualism is disavowed, yet perforce implied, by nearly all psychiatrists: in this century it has been most conspicuously embraced, and repudiated, by those who concern themselves especially with "psychosomatic" illness. The very distinction between physical and mental, which is implicit in the designation of psychiatry as a distinct branch of medicine, begs the question. If the dualism is denied, then the territory of psychiatry becomes theoretically coextensive with medicine.

Future of Psychiatry

Can the trends now discernible in psychiatry be projected a little way into the future? Prophecy, it has been justly said, is the most gratuitous of all forms of error; but prediction is an inescapable exercise for doctors, and a short-term prognosis may be offered, hesitantly, of the relations between medicine in general and this ambitious yet diffident branch of medicine.

There has been a turn in medical thought and in public attitudes towards the use of hospitals in psychiatric treatment. The new goal is to reduce the institutional provision in mental hospitals, to re-locate it largely in general hospitals, and to improve the measures of support and

rehabilitation which the community can make available outside the hospital. These aims are in keeping with liberal and permissive trends in society at large. If attained, they will strengthen the links between psychiatry and other branches of medicine. They will, however, cast a burden on the families of those mentally ill patients who are not in hospital, and may conduce to insufficient segregation of those who, because of their mental disorder, endanger other people. The ends are obviously good, the means imperfect: and, though the experiment succeeds, it may be only at a price—a price which society, collectively, is hardly willing to pay.

The respective functions of the psychiatrist and of other people who are professionally concerned with mental disorders are still unclear enough to make conflict between them possible. It is in the treatment area that dissension has arisen in the past and will arise again. An analogy pointing to the likely settlement of this clash of interests may be seen in the agreed role, *vis-à-vis* the doctor, of the biochemist confronted with inborn errors of metabolism, or the role of the microbiologist and the pharmacologist confronted with infections.

It would be eccentric to doubt that as knowledge accumulates, both about the bodily pathology of mental illness and about its psychopathology, medicine as a whole will be more and more penetrated with psychiatric discoveries and the application of psychiatric principles. The rate at which this will occur must depend on the cogency of the evidence and the acceptability of the methods and concepts on which the psychiatrist relies. It seems likely to be a steady rather than a rapid process. Phases of quiescence or spuriously impressive growth will bring their own Nemesis.

It is natural to wonder from which quarter our help will mainly come; which sciences will fertilize our field and enrich us, if we know how to apply them. Will it be from epidemiology, or biochemistry, or psychology, or genetics, or from all of these; or will it be from the application of some science as yet remote from our affairs; or will it be from great technological advances, as in automation and electronic computing? I cannot suggest the answer. More than once there has been joyous acclaim for a "breakthrough" in psychiatric research, but after a while the rejoicing has been toned down to a whisper. On the other hand, no one, however farsighted, could have prophesied ten years ago how the modern study of chromosomes, or the development of chromatography and other separation methods, would elucidate some forms of mental defect.

Conclusions

A symposium on the future of psychiatry was recently held in the United States, and the contributors ranged from those who foresaw an explosion of discoveries along a wide horizon to others who uttered sombre warnings: "unless our philosophy of science becomes more critical, experimental, more deductive and inventive, we will remain in the Renaissance period of medical history, awaiting a Harvey to catapult us into the seventeenth century."[29] A less extreme view would take account of the volume of productive research into psychiatric problems now going on in many countries, and would draw comfort and hope from the exciting advances in the correlation of localized cerebral activity with behaviour, as well as from the study of psychological development, application of learning theory, knowledge of the action of chemical substances on neural areas, the growing use of epidemiological methods, and the steady accumulation of detailed experimental and clinical observations.

Psychiatrists, hitherto ardent, if not over-ardent, in the trial of new methods of treatment, are now much more aware of the common failing which Bacon adverted to: "Even when men build some science and theory upon experiment, yet they almost always turn aside with premature and hasty zeal to practice, not merely on account of the advantage and benefit to be derived from it, but in order to obtain in the shape of some new work an assurance for themselves that it is worth their while to go on." The many varieties of psychotherapy and of physical treatment now employed are being required to show their credentials, and reliance upon unchecked clinical experience for their appraisal is surely a dying illusion.

It is through its place in the roomy household of medicine, and its intimacy with many sciences, social and biological, that psychiatry can find the best assurance of increase by studying out the secrets of nature. So we may say with Bacon[30] "that many excellent and useful matters are yet laid up in the bosom of Nature . . . quite out of the common track of our imagination, and still undiscovered; but they too will doubtless be brought to light in the course and revolution of years."

REFERENCES

1 Burton, R. (1621). *The Anatomy of Melancholy. Democritus Junior to the Reader.* London.
2 Browne, T. (1642). *Religio Medici,* Part the Second, Section IX. J. F. Spoor, London.
3 Bertoloso, E. (1959). *Acta med. Hist. patav.,* **6**, 17.
4 Dodds, C. (1960). *Brit. med. J.,* **2**, 182.
5 Sydenham, T. (1742). *Works.* London.
6 Burrows, G. M. (1828). *Commentaries on the Causes, Forms, Symptoms and Treatment, Moral and Medical, of Insanity.* London.
7 Heinroth, J. C. A. (1818). *Lehrbuch der Störungen des Seelenlebens oder der Seelenstörungen.* F. C. W. Vogel, Leipzig.
8 Dubois, P. (1909). *The Psychic Treatment of Nervous Disorders.* Funk and Wagnalls, London.
9 Allport, G. W. (1951). *The Individual and His Religion.* Constable, London.
10 Mowrer, O. H. (1960). *Amer. Psychologist,* **15**, 301.
11 Kant, I. (1840). Anthropologie in pragmatischer Hinsicht. In *Gesammelte Schriften* (eds. K. R. Rosenkranz and F. W. Schubert), vol. XII. Leipzig.
12 Wootton, B. (1963). *Brit. med. J.,* **2**, 197.
13 Adrian, E. D. (1963). *Proc. roy. Soc. Med.,* **56**, 523.
14 Waddington, C. H. (1963). Propagation of ideas. In S. M. Farber and R. H. L. Wilson's *Conflict and Creativity.* McGraw Hill, London.
15 Menninger, K. (1962). The Evolution of Diagnosis. In *Psychiatry in Medicine,* edited by N. Q. Brill. Cambridge Univ. Press, London.
16 Kennedy, J. F. (1963). Mental Illness and Mental Retardation. *Message to Congress.* 88th Congress. Document 58.
17 Osler, W. (1902). *Chauvinism in Medicine.* An address before the Canadian Medical Association. Williams and Wilkins, Baltimore.
18 Sutherland, A. J. (1863). *Oratio Harveiana.* Royal College of Physicians, London.
19 Jaspers, K. (1963). *General Psychopathology.* Translated by J. Hoenig and M. W. Hamilton. University Press, Manchester.
20 Popper, K. R. (1963). *Conjectures and Refutations.* Routledge, London.
21 Bacon, F. (1858). Of the Proficience and Advancement of Learning. In *Collected Works,* edited by R. L. Ellis, J. Spedding, and D. D. Heath. London.
22 Shepherd, M. (1963). *The Teaching of Psychiatry in the United States.* Pitman, London.
23 Kaufman, M. R. (1963). *Psychiat. Quart.,* **37**, 340.
24 Miller, N. (1963). Some applications of modern behaviour theory to personality change and psychotherapy. Unpublished.
25 Billroth, T. (1876). *Über das Lehren und Lernen der medizinischen Wissenschaften an den Universitäten der deutschen Nation.* Vienna.
26 Boulding, R. E. (1963). *Proc. Amer. Philosoph. Soc.,* **107**, 117.
27 Leighton, A., and Lambo, T. A. (1963). *Psychiatric Disorder Among the Yoruba.* Cornell University Press, New York.
28 Gregg, A. (1944). *Amer. J. Psychiat.,* **101**, 285.
29 Rothman, R. (1962). Future of genetic, developmental, and organic approaches. In *The Future of Psychiatry,* edited by P. Hoch, and J. Zubin. Grune and Stratton. London.
30 Bacon, F. (1858). Novum Organum. In *Collected Works,* edited by R. L. Ellis, J. Spedding, and D. D. Heath. London.