THE GENESIS OF THE PHYSICIAN'S IDEAL.*

BY

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WHEN I received the invitation to address you to-day at the beginning of a new session of academic work, I was so sensible of the honour which was done to me that I could not refuse what had been so courteously asked; but when I faced the practical question, What shall be the subject of my address? I found it nowise easy to give a satisfactory answer. It was obviously out of my power to speak of anything which lay within the ambit of medical science, for my ignorance would be apparent, and might be even ludicrous. The occasion hardly lent itself to a sermon, a form of composition with which indeed I am not wholly unfamiliar, but which might not be as welcome to my audience as it would be convenient to myself. Finally I decided to select a subject which could not be wholly without interest to medical students, and which might fairly and even usefully be discussed by one who could not himself lay claim to that description. I am going to speak to you on the Genesis of the Physician's Ideal. Whether that rather pompous title carries to your minds the meaning which it carries to mine is not certain. In any case it will suffice for my purpose, and whatever dubiety belongs to it will be cleared away by the address itself. With so much of personal explanation, I betake myself to my duty.

Every man's career is mainly determined by three factors—his natural capacity, his education, and the circumstances in which he has to play his part in the drama of life. To these, which are universally recognized, I propose to add a fourth—namely, the ideal of his employment, which is established, and which perforce he has accepted. It is of the last only that I shall speak, though of course it is inseparably linked with the rest. When, however, we speak of a professional ideal we are at once arrested by the difficulty that such an ideal is hardly ever authoritatively defined. There are professional rules which must be obeyed; professional customs which may not safely be departed from; a professional casuistry which may not wisely be ignored. The Ideal inheres in these, and may be inferred from them, but they do not clearly define it. We may supplement their witness by changing our point of view, and regarding the profession not from within, but from without. What is the expectation with respect to professional conduct which reigns in the public mind, which determines the measure of social consequence which the members of the profession possess, and which forms the standard by which individuals are judged? Men's behaviour is shaped by the expectations which they evoke in the minds of their fellows hardly less than by the conscious intentions which fill their own. *Noblesse oblige* really means that public expectation has coercive power even over private conduct.

THE HIPPOCRATIC OATH.

The physician in modern society holds a very high place. He is generally regarded with respect. It is not merely that his distinctive service is indispensable, and is universally required, but also that he commands the public confidence in a very notable degree, and has behind him a tradition of professional behaviour which is generally admired. It is assumed that he will be adequately trained; that he will be entirely honourable; that he will be patient, considerate, and assiduous; that he will be generous and even-minded, giving his service as frankly and fully to the poorest as to the richest of his patients; that he will be, in a quite astonishing measure, disinterested. We expect the doctor to be something more than a scientific specialist, skilled in his specific branch of work. We look for education and good manners. He must be welcome in society for his own sake. No doubt there is a measure of idealizing sentiment in this conception of the physician; but it is near enough to general experience to maintain itself in the

teeth of all individual contradictions, and its existence is not only a remarkable evidence of the high level of medical professional habit in the modern world, but also a precious possession of the medical profession itself. The Ideal has, of course, never been realized fully in any individual. If it had been so realized it would have ceased to be the ideal. Like all ideals, it is a composite of which the component elements have been separately expressed. But the combination in a single picture sets before every medical student a goal which he must strive to reach. That picture was upheld to the physicians of ancient Hellas in the so-called "Hippocratic Oath." It was natural to link it with the name of Hippocrates, for he "will ever remain the type of the perfect physician." Let me quote a few sentences which I take from Dr. Charles Singer's charming article on "Medicine" in the volume entitled *The Legacy of Greece*. The ancient Greek physician accepted the following version of his professional duty:

"I will follow that system of regimen which, according to my ability and judgement, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel; nor will I aid a woman to produce abortion. With purity and holiness I will pass my life and practise my Art. . . . Into whatsoever houses I enter, I will go there for the benefit of the sick, and will abstain from every act of mischief and corruption; and above all from seduction. . . . Whatever in my professional practice—or in connexion with it—I see or hear in the lives of men which ought not to be spoken of abroad, I will not divulge, deeming that on such matters we should be silent."

"Respected equally throughout the ages by Arab, Jew, and Christian," comments Dr. Singer, "the oath remains the watchword of the profession of medicine." It is only, however, in modern times that society generally has acknowledged in the medical profession such a standard of professional behaviour as the Hippocratic Oath demands. The brilliant dawn of Greek medical science was soon overcast, and succeeded by the "cloudy and dark day" of superstition and barbarism. It was not until comparatively recent times that the Greek tradition was recovered, and medicine became genuinely scientific in method.

THE PRE-SCIENTIFIC ERA.

The physicians of the past were the victims of their circumstances. In the pre-scientific era, which may perhaps be defined as the entire period before Harvey (ob. 1657), they were so badly handicapped by ignorance that their meagre successes in the curative art generated more suspicion than confidence. They were known to be often the heralds of death; they were seen to be often powerless to preserve life. Moreover, their services were sometimes sought for the purpose which they were so plainly able to serve. The death of individuals might be desirable for a variety of reasons, and the doctor's professional skill might be invoked by jealousy, hatred, and ambition, as well as by duty and pity. The popular imagination, which ever inclines to be morbid, magnified the facts, and on a very slight foundation raised a truly formidable fabric of suspicion. It is difficult to imagine a more damaging professional recommendation than that which the Roman people bestowed on the physician of the unpopular Pope Adrian VI, when they hastened to his house, on hearing the welcome intelligence of the Pontiff's decease, and hanged a wreath on the doctor's door inscribed "*To the deliverer of his country.*" It was an inevitable association of ideas which led them to connect Adrian's sudden demise with his physician's professional attentions. The suspicions of ignorance are as cruel as they are often unwarranted. Thus when Austregild, the queen of Guntram, knew that she was dying, she wreaked her indignation on the doctors who had failed to cure her. Summoning her royal husband to her bedside, she made him swear to have them slain as soon as she expired. I follow the chronicler:

"So saying she gave up her unhappy soul. But the King, the funeral rites duly performed, was constrained by the oath sworn to his unjust queen, and fulfilled her wicked behest. For he ordered the two doctors who had served her well to be slain by the sword. It stood plain in the judgement of thinking men that such fulfilment might not be without sin."

* Introductory address to the University of Durham College of Medicine, Newcastle-upon-Tyne, October, 1930.

The profound pessimism which governed mediaeval thinking invested the very notion of curing diseases and thus cheating death with a doubtful if not actually irreligious character. Sorcery, magic, and witchcraft were closely connected with medicine, and these created a certain shrinking in orthodox minds. Moreover, it is certain that many disreputable quacks pretended to curative skill, and the circumstance that the best medical knowledge of the time was to be found among Jews, Mohammedans, and heretics did not tend to reassure the public. Then the sinister connexion between the patient's misery and the physician's fees was never forgotten. Even so amiable and intelligent a writer as John Earle, writing in 1638, harps on this string. In his *Microcosmography* he includes a description of what he calls "a meer dull physician" as both hard and covetous:

"Anatomies, and other spectacles of mortality have hardened him, and he is no more struck with a funeral than a grave-maker. In conclusion, he is a sucking consumptive, and a very brother to the worms, for they are both engendered out of man's corruption."

Similarly of "a surgeon" we are told:

"He deals with broken commodities, as a broken head or a mangled face, and his gains are very ill got, for he lives by the hurts of the commonwealth."

These are, of course, very ancient gibes. Pliny tells us that in his day they were hurled at the medical profession. The considerate casuistry by which doctors may rightly conceal from their patients the gloomy view which they may have formed of their patients' prospects, passed into the ill-sounding proverb, *Mentiris ut medicus*—"You lie like a doctor." And as late as the nineteenth century Byron repeats the hackneyed jeer with a characteristic touch of satire:

This is the way physicians mend or end us,
Secundum artem: but although we sneer
 In health—when ill, we call them to attend us,
 Without the least propensity to jeer;
 While that "*hiatus maxime defendus*,"
 To be fill'd up by spade or mattock, 's near,
 Instead of gliding graciously down Lethe,
 We tease mild Baillie, or soft Abernethy.

Doctors in the seventeenth century, and indeed for long after, were suspected of learning by experiment on their patients, a half-truth which easily passed into the grossest injury. Jeremy Taylor, in his well-known treatise *Ductor Dubitantium*, quotes Pliny as complaining that physicians grow learned at our risks, and make their experiments at the cost of our deaths, so that they alone can kill a man with impunity; and he adds the plaintive comment that it is hard that the physician should grow wiser at no cheaper rate than the deaths of many patients. Fuller, writing about the middle of the seventeenth century, in his picture of the "Good Physician," lays down the maxim:

"He handsels not his new experiments on the bodies of his patients.—Letting loose mad receipts into the sick man's body, to try how well nature in him will fight against them, whilst himself stands by and sees the battle: except it be in desperate cases when death must be expelled by death."

SCIENCE AND HUMANENESS.

The remarkable confidence with which the medical profession is now universally regarded has its root in the fact that there is now truly a Science of Medicine, and that the patient is no longer the victim of arbitrary empiricism or an unintelligent following of tradition. An essential element in our ideal of a doctor is scientific training, and (what is by no means the same thing) the scientific temper.

Humaneness hardly less than Science is integral to our conception of the ideal physician, and this, too, is a very recent acquisition. Surgery was long handicapped by the horror inspired in the popular mind by the indispensable methods of surgical training. Sentiment allied itself with the crudest religious beliefs to oppose the practice of dissecting dead bodies, which yet was essential to anatomical study. The surgeons were as insistent as the public was reluctant. Visitors to Scotland will have noticed the large iron cages, or railings, placed over graves which give so sinister an aspect to Scottish graveyards. They were devices to hinder the persistent efforts of the

"resurrectionists," as they were grimly styled, who sought to supply, at large profit to themselves, the professors of anatomy with bodies for dissection by robbing the graves of freshly buried corpses. It is barely more than a century since the whole country was thrilled by the revolting story of Burke and Hare, two miscreants who had pursued for years a business of lucrative crime by selling to the surgeons the bodies of those whom they murdered. Such revelations of callousness and criminal greed created a great volume of repugnance in the public mind, and this could not but extend to the profession which was in some measure interested in such horrifying procedures. We know how, even at the present time, an irrational opposition to the practice of what is loosely called "vivisection" can sweep educated and normally reasonable people into extraordinary violations of equity and good sense. If, then, humaneness has come to be conspicuously associated with the popular conception of a physician, it is because the conditions of scientific research are more generally understood, and the processes of medical training are apparently related to the requirements of science.

The experimental method, which is the normal procedure of physical science, and the very condition of that marvellous development of medicine which is the conspicuous glory of the modern epoch, lent itself to the crudest misunderstanding in minds clouded by barbarous superstition and filled with ignorant suspicions. They did not see in experiment that patient interrogation of Nature which is the law of scientific advance, but only the expression of an irreligious curiosity or the indulgence of a fiendish cruelty. As the scientific atmosphere was created, and even the humblest ranks of society acquired a vague understanding of the scientific point of view, above all as the curative triumphs of medical science became generally known, this association of the physician with harshness and callousness to pain died in the popular mind, and was replaced by the more natural association with physical rescue and relief. Science and humaneness blended in the popular conception of the physician, and became so inseparable that in the common view the doctor was the symbol of beneficence. Few things are, in my judgement, more honourable to the medical profession than the note of trust and something like affection which marks the language of the poor when they speak of the doctor.

Some of you will have read an admirable novel, *My Brother Jonathan*, by Francis Brett Young, in which a charming picture, which is also true to life, of a general practitioner working among an industrial population is drawn by a master's hand. The doctor is shown in circumstances of exceptional difficulty winning by sheer generosity of service the trust and affection of the poorest people. In this connexion we may mention the influence of the medical officers, who within recent years have come to hold so important a place in the hierarchy of local government. They have thrown themselves with so much enthusiasm into the work of hygienic improvement that in many cases they have felt and spoken as the apostles of social reform. We may not unfitly call them the Tribunes of the People. The element of professional ambition was, of course, not absent. Medical officers also "magnified their office," and personal interest is never entirely separable from professional ambition. Nevertheless, it is certain that a higher motive entered, and that in many cases it carried men to great heights of unselfish and sometimes unpopular toil, and filled them with a generous enthusiasm for public service. I think our medical officers have made no mean contribution to the shaping of the Physician's Ideal.

Let us pass from the professional to the more personal aspects of our subject. I said that the modern physician is expected to be a cultivated and well-mannered man acceptable in society, which assigns to him an assured and dignified position. In antiquity it was generally otherwise. Nor is this surprising when we remember that physicians were largely slaves and freedmen, and generally quite uneducated. I borrow from Friedländer the following account of the physicians of imperial Rome:

"Medicine was, up to the last, largely in the hands of freedmen and slaves: Justinian authorized the maximum price (sixty gold-pieces) for slaves thus trained, eunuchs fetching only fifty. Jurists constantly speak of the services due from physicians."

trained freedmen: thus they had to visit their patrons' friends gratuitously. Patrons could also prevent their freedmen from setting up a competing practice, and with this object, compel them to accompany them on their own visits.

"Free-born physicians at Rome were mostly foreigners. If permanent residents, Julius Caesar enfranchised them, as also teachers. Augustus extended this by conferring civic immunity. Romans, according to Pliny, rarely learned this profession. . . .

"In antiquity there were no examinations and little responsibility: hence many unqualified practitioners thrust themselves into a lucrative profession, such as shoemakers, carpenters, dyers or smiths, just as unsuccessful doctors became corpse-bearers or professional gladiators; at any rate Martial scoffs at such, who in their new occupation practised the old one still. Amongst these quacks, makers of salves and official wares rank high. Galen says that most so-called physicians of his day could hardly read, and warns his colleagues of the necessity of good grammar in addressing patients: such physicians also would know nothing whatsoever of rhetoric and philosophy. Thessalus, an apprentice of his father, a weaver, as a doctor under Nero gained great vogue, and said all his knowledge had been won in six months. . . .

"Galen gives very definite counsel as to medical relations with the patient. His visits should be long or short, as his patient wished, whom he must not irk. Some doctors clumsily awake and irritate a patient by long speeches or noisy tread: such things must be avoided. . . .

"Some patients must be enlivened with anecdotes. The doctor must deport himself properly, not be pompous, affected, or cringing. . . . Many doctors acceded to their patients' every wish, giving them cold water, snow-cooled wine, baths, whenever requested. True, they thus found a ready key to many doors. They grew rich, had much power, and often had pages given them as pupils. The rich were the most rebellious patients: best avoided altogether, says Galen: but doctors had willy nilly to put up with their whims. Whilst disapproving of mere submissiveness, in special circumstances the physician might, against his better knowledge, indulge the patient in some comparatively harmless trifle: doctors, if loathed, are not obeyed."

It is sufficiently apparent that we have travelled a long way from the professional standard of the Hippocratic Oath; but the Romans were a coarse-minded and practical people, which vulgarized and degraded the intellectual treasure which they received from the Greeks whom they conquered, and medicine was no exception to the general rule.

The professional behaviour of the fashionable physician has been the mark of hostile criticism in modern literature, where "a good bedside manner" is often associated with insincerity and toadyism. You will remember how Anthony Trollope has drawn the portrait of the honourable physician in the plain-spoken Dr. Thorne, and set it in sharp contrast with that of his accommodating but insincere professional rival, Dr. Filgrave. Bluntness of speech may, indeed, be prompted by something less respectable than honesty. I borrow an instance from the fascinating pages of Professor Trevelyan's latest historical publication. He is speaking of the drunkenness which disgraced English society in the reign of Queen Anne:

"The leading physician in the capital, Dr. Radcliffe, whose highly rewarded skill and generous disposition stand commemorated in one of the noblest buildings of his old University, was once sent for at an unseasonable moment to attend the Princess Anne. He blurted out over the bottle that 'Her Highness's distemper was nothing but the vapours.' This piece of truthfulness in wine, being reported at Court, had, his biographer tells us, the effect of permanently consigning the future queen and her family to other and less skilful hands—possibly with important consequences to the history of England."

Dr. Radcliffe's tongue was at all times more clever than well guided. In 1697 he was summoned to attend William III. "When he saw the King's swollen ankles, he said that he would not have the King's two legs for his three kingdoms." This gave such offence that William never saw him again. Of the famous Dr. Abernethy (1764-1831) it is recorded that he had a serious purpose in his notorious rudeness and even brutality of speech. Not only did he thus indicate his horror of "humbug," but he found, or thought that he found, that a masterly roughness commanded the confidence of his patients even better than an amiability, possibly suggestive of weakness, would have conciliated it. Happily most modern physicians have discovered a middle way between the toady's insincerity and the boor's rudeness. Certainly the Physician's Ideal includes culture and the courtesy which culture requires.

Francis Bacon's counsel is marked by the shrewd wisdom which was characteristic of that famous man:

"Physicians are some of them so pleasing and conformable to the humour of the patient as they press not the true cure of the disease: and some other are so regular in proceeding according to art for the disease as they respect not sufficiently the condition of the patient. Take one of a middle temper or, if it may not be found in one man, combine two of either sort, and forget not to call as well the best acquainted with your body as the best reputed of for his faculty."

MIND AND BODY.

The ideal physician unites technical knowledge and a just understanding of the specific circumstances of his patient's case. Within the last generation the range of the physician's professional concern has been greatly extended. The sharp dividing line between the psychical and the physical has grown fainter; and tends to vanish away. Psychotherapy has attained a settled place in the procedure of medical science; and it has emphasized those aspects of the physician's task which are least technical and academic. The physical ills of men are seen in a larger context. Behind the familiar symptoms of physical disease lie forces and factors which are not physical, which can often but be guessed at, and which none the less condition the potency of the appropriate remedies. There is a disastrous reciprocity between mind and body. Disease may occasion such a depression of mind as may aggravate it, and even go far to make it incurable. The causes of mental depression may be ultimately moral and religious—a bad conscience or a superstitious belief. Shakespeare, in *Macbeth*, has pictured a doctor confessing his powerlessness in front of such morally conditioned physical distress. Must the pathetic appeal remain for ever unanswered?—

Canst thou not minister to a mind diseased;
Pluck from the memory a rooted sorrow;
Raze out the written troubles of the brain;
And, with some sweet oblivious antidote,
Cleanse the stuff'd bosom of that perilous stuff,
Which weighs upon the heart?

In this situation, where the physician *qua* physician is helpless, the clergyman may find the opportunity of exercising his distinctive ministry, and the two great curative professions find themselves in an alliance which is exalting to both. You will perhaps be familiar with that brilliant volume of the late Dr. Rivers, *Medicine, Magic, and Religion*. There that keen and honest thinker envisaged in the future a great reconciliation, which would reproduce with a difference the primitive harmony which specialization had broken up.

"If medicine," he says, "is to maintain its hold on certain aspects of disease which should come properly within its sphere, it must find that it has much to learn from the priest, if, indeed, some kind of collaboration between the two is not often desirable."

The Lambeth Conference set on record its conviction that "there is urgent need for co-operation between clergy and doctors, since spiritual and physical treatment are complementary, and equally necessary for true well-being." I think the Physician's Ideal includes a freedom from traditional prejudice which welcomes such an honest acceptance of scientific truth as will not exclude any new departure which it may require in professional habit.

THE LABOUR AND THE HIRE.

But I must not ignore the protest which may well be taking shape in some of your minds. It may be stated in this way: "When all is said about the Physician's Ideal, it remains the case that men become doctors primarily in order to earn their living. They look to be paid for their services, and their professional success is measured by their professional income. In the coarse phrase of the marketplace, Fine words butter no parsnips. The doctor, like other wage-earners, has 'got to live.'" It must be frankly acknowledged that this protest expresses truth, but certainly not the whole truth. And the truth which it omits is so important that its omission may transform even the truth which it states into perilous falsehood. In all the higher human employments there is a certain incongruity between their true end and their immediate purpose. "Those three noble Professions which all civil

Commonwealths do honour," says Sir Thomas Browne in his quaint fashion, "are raised upon the fall of Adam, and are not any way exempt from their infirmities." The lawyer is ordained to secure justice, but litigation is the source of his wealth. The clergyman is ordained to promote goodness, but his benefice provides his income. The physician is ordained to promote health, but it is sickness that fills his purse. Lawyers, clergymen, and physicians are all tempted so to pursue the lower immediate purposes of their professional work as to forget its supreme and ultimate end. Just as they yield to this temptation, they lower the levels of their actual achievement, and become even professionally inefficient. For it is always true, and never so true as in the case of the nobler employments of men, that the higher the mark aimed at the higher is the mark actually reached. Aim lower, and you will hit lower. You cannot place a money value on the services of the lawyer, the clergyman, and the physician, for their distinctive service demands, over and above the professional duty, something personal which defies calculation. I suppose that is the reason why their remuneration is generally determined by conventional payments or fees, and is not left wholly to "the higgling of the market." The really great lawyer has a passion for justice; the really great clergyman has a passion for goodness; the really great physician has a passion for health—although it is true that, if all men were just, good, and healthy, there would be no demand for lawyers, clergymen, and physicians. They are all to that extent conspirators against their own professional importance.

You will have noticed that Sir Thomas Browne makes no mention of that great profession which holds so large a place in our modern world, and has its unchallenged supremacy in our universities—I mean the teaching profession. The reason is not doubtful. In that relatively simple age, teachers were generally also clergymen, and Sir Thomas Browne tacitly includes them under that description. The twentieth century is not as the seventeenth. It is familiar with a range of studies vastly greater, so that perforce the teaching profession has become independent, organized, and increasingly powerful. But teachers do not stand outside the general law. They also have to work with both a nearer and a more distant objective. Examinations have to be passed, and the teacher has to aim at securing his pupils' success; but always he has a higher end. He has to set forth the truth, and so to teach as to make his pupils also lovers and servants of the truth. If it shall so fall out that these ends are conflicting, so that to advocate current errors, dominant in the schools, will condition success in examinations by treason to the truth, then loyalty to his Ideal will require that the teacher should accept unpopularity, and even professional failure. Do undergraduates still read Browning? When I was at Oxford we were fond of his poem *A Grammarian's Funeral*, which illustrates wonderfully what I am now insisting upon. Here is the contrast between loyalty and treason:

That low man seeks a little thing to do,
Sees it and does it:
This high man, with a great thing to pursue,
Dies ere he knows it.
That low man goes on adding one to one,
His hundred's soon hit:
This high man aiming at a million,
Misses an unit.
That has the world here—should he need the next,
Let the world mind him!
This, throwing himself on God, and unperplexed,
Seeking shall find him.

Let me quote again from the *Religio Medici* of Sir Thomas Browne, which, though written as long ago as 1635, is eminently worth reading by the modern physician, and which I beg heartily to commend to you:

"I feel not in me those sordid and unchristian desires of my profession: I do not secretly implore and wish for Plagues, rejoice at Famines, revolve Ephemerides and Almanacks in expectation of malignant Aspects, fatal Conjunctions, and Eclipses. I rejoice not at unwholesome Springs, nor unseasonable Winters: my Prayer goes with the Husbandman's: I desire everything in its proper season, that neither men nor the times be put out of temper. Let me be sick myself, if sometimes the malady of my

patient be not a disease unto me. I desire rather to cure his infirmities than my own necessities. Where I do him no good, methinks it is scarce honest gain: though I confess 'tis but the worthy salary of our well-intended endeavours. I am not only ashamed, but heartily sorry, that, besides death, there are diseases incurable: yet not for my own sake, or that they be beyond my art, but for the general cause and sake of humanity, whose common cause I apprehend as my own.

LOYALTY TO THE IDEAL.

The Physician's Ideal has been slowly and painfully gained in the teeth of many hostile forces; and if it is to be maintained and transmitted, it will only be by strenuous and high-minded effort. To-day, if I mistake not, it is threatened by some of the characteristic developments of our time. Specialization in medical study and practice may be indispensable, but it endangers none the less that largeness of interest and culture which has marked the greater physicians of the past. Contemporary politics cast their own shadows on the progress of medical science. Socialism is not friendly to the highest individual achievement. The democratic tendency to bring physicians into the category of State officials, and to organize their professional activities on conventional Civil Service lines, is not wholly favourable to the highest view of their work, and may lower that personal relation with their patients which has often been highly beneficial to both. "The years teach much which the days never knew," says a wise proverb, and we must not be hasty to condemn the untried. It is always easy to be unfair to the distinctive features of one's own time, very easy in the case of a man whose own experiences of society belong to the past. At least I am on safe ground when I insist—and this is the moral of my present address—that, whether as a State servant or as a private practitioner, the physician's efficiency will continue to be conditioned by his resolute loyalty to the Physician's Ideal.

"SCIENCE DISCIPLINE."

LECTURE BY SIR DAVID PRAIN.

LIEUT.-COLONEL SIR DAVID PRAIN, LL.D., M.B., F.R.S., I.M.S. (ret.), delivered the second annual Alexander Pedler Lecture on October 22nd, in the University of Liverpool, under the joint auspices of the British Science Guild and the University. The subject of the lecture was "Science discipline."

Huxley, he said, held that in an ideal university a man should be able to obtain instruction in all forms of knowledge, and discipline in the use of all methods by which knowledge might be obtained. For him there were three forms of knowledge: the limits of one's individual powers, the uses to which these powers may be put, and the conditions under which these powers can be used. These forms of knowledge were the same for literature as for science, for science and literature were but two sides of the same shield. Science, however, no longer connoted all knowledge, but meant more particularly "natural knowledge." Science discipline, therefore, implied cultural exercise of every method by which natural knowledge could be obtained, as contrasted with science training, which implied technical exercise in any method by which natural knowledge might be employed.

The Purpose of Discipline.

The sole object of science training was to make an adequate number of scholars, already disciplined in the requisite natural knowledge, competent to give the general community effective scientific help, and confusion should be impossible between training and discipline in this sense. The purpose of discipline was twofold: on the one hand, to furnish those who wished to serve the community scientifically with the kind of natural knowledge that would enable them to profit by training for technical efficiency, and, on the other hand, to render all scholars in an ideal university competent to appreciate the scientific help afforded the community by those specially trained to give it. This second object was not less important than the first. And while the first of these ends had now