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INDIVIDUALITY IN MEDICINE

HARVEIAN ORATION DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
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BY

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My Lord President and Fellows,

I have to thank you for the great honour which is mine in being entrusted with the delivery of the annual Oration, the two hundred and thirtieth to be given since the series was instituted by William Harvey's gift to the College in 1656. As you know, he directed that the Oration should be made in Latin, and should include a commemoration of all the Benefactors of the said College by name. With the passage of nearly three hundred years, good and practical reasons have been found for disobeying the strict letter of the terms of the Gift. I should add little to the dignity of this College if I attempted to address you in Latin, and I should like to pay tribute to the magnanimity of Dr. Alexander Sutherland, who, while giving the Oration in Latin in 1863, suggested that his successors might be allowed to address the College in English.

Benefactors

It is no longer the custom to commemorate all the Benefactors of the College by name and to record particulars of their benefactions, for the honourable reason that the list has become too long. I have pleasure, however, in recording a very recent benefaction, most appropriate to be commemorated in this Address. It is that of Dr. Ernest Christison Carter, who, being the senior member of this College, has presented the sum of one thousand pounds "to the end that friendship between members of the College may be continued and maintained, for the entertainment of distinguished guests from other countries, and if the Treasurer laid down some Port, that the health of the Senior Member should be drunk at one of the College Dinners."

William Harvey

Harvey bids us to search and study out the secrets of Nature by way of experiment; and also, for the honour of the profession, to continue in mutual love and affection among ourselves.

In these things Harvey was the great exemplar. When he was appointed Lumleian lecturer on anatomy in this College in 1615, there had been no notable advance in medicine for a thousand years. For political reasons the subject was confined within the orderly system formulated by Galen, and study consisted largely of disputation on the applications of this authoritarian creed. Unorthodoxy was punished by the civil power, as is happening now in a great territory governed by a union of republics.

A sidelight on Harvey's independence of mind and preference for personal observation is afforded by his discussion of the escape of the chick from the egg. First he quotes Hippocrates and his own teacher Fabricius of Padua. The latter had written:

"The chick wants air sooner than food, for it has still some store of nourishment within it; in which case the chick by his chirping gives a sign to his mother of the necessity of breaking the shell, which he himself cannot accomplish by reason of the hardness of the shell and the softness of his beak. The chick, nevertheless, is already so strong, and the cavity in the egg so ample, and the air contained within it so abundant, that the breathing becomes free and the creature can emit the sounds that are proper to it. These can be readily heard by a bystander, and were recognized by both Pliny and Aristotle, and perchance have something of a petition in their tone. For the hen, hearing the chirping of the chick within . . . she breaks the shell. The chirping of the chick is consequently the first and principal indication of the creature desiring to make its escape and of its requiring air. This the hen perceives so nicely, that if she hears the chirping to be low and internal, she straightway turns the egg over with her feet, that she may break the shell at the place whence the voice proceeds without detriment to the chick."

Harvey comments, "All this is stated pleasantly and well by Fabricius; but there is nothing of solid reason in the tale. I have found by experience that it is the chick himself and not the hen that breaks open the shell. I have further seen the chick raise up the top of the shell upon his head and remove it." So Harvey demolished an ancient fallacy by the simple method of observation; but he did it with gentle urbanity, a quality which we find in the exposition of his great discovery of the circulation of the blood. He deprecates harsh criticism of opponents in a field in which, as he says, "all have laboured well." His courtesy to opponents and his good humour were proof against many provocations. Physician to King Charles I, he received friendship and aid in his researches from his royal patient. While attending the King at Nottingham on the outbreak of the Civil War Harvey's lodgings in London were entered by a mob of citizen-soldiers. He writes:

"This is the cause of my sorrow: Whilst in attendance on the King during our late troubles and more than civil wars, not only with the permission but by the command of Parliament, certain rapacious hands not only stripped my house of all its furniture, but what is a subject of far greater regret to me, my enemies abstracted from my museum the fruits of many years of toil. Whence it has come to pass that many observations,

particularly on the generation of insects, have perished with detriment, I venture to say, to the republic of letters."

His exclamation does not seem over-emphatic: "Let gentle minds forgive me, if recalling the irreparable injuries I have suffered, I here give vent to a sigh."

At the end of the Civil War Harvey returned to London and we know that he attended meetings of this College. Here he must have encountered Fellows who had taken a prominent part with the Parliamentary Forces, and it is surely to his credit and to that of the College as a whole that no record of discourtesies or ill-natured repercussions can be discovered. Should we perhaps give special heed to this dignified tradition in a time of social change? Fortunately there is now no deadly civil war, but rapid changes in the relation of the individual to the State are not accomplished without injustice and resentment.

In 1654 Harvey was unanimously elected President of this College, an honour which he modestly declined. He had held the Lumleian lectureship for forty-one years, and seems to have discharged its duties with as much regularity as the times and his travels would allow. We hear of no complaints by the authorities of the College, but his absences caused uneasiness to some of his colleagues at St. Bartholomew's. He had been appointed physician to that hospital in 1609, and at a meeting of the Court of the hospital held on Sunday, January 19, 1633, inquiry was made into "a complaint of some of the surgeons of this hospital that whereas Doctor Harvey physician for the poor of the said hospital by reason of his attendance on the King's Majesty cannot so constantly be present with the poor as heretofore he hath been; but sometimes doth appoint his deputy for the same." The difficulty was resolved, and the Governors of the Hospital seem to have treated Harvey with consideration and respect.

In 1628 was published his book on *The Motion of the Heart and Blood*, which liberated medicine from the Dark Ages and set it on the path of progress which it has travelled ever since. The incontrovertible evidence with which he supports the validity of his discovery is based partly on anatomical dissection, partly on experiments on living animals, and partly on clinical observation. With regard to the latter, he quotes many illustrative cases of circulatory disease met with among his private patients and among the sick poor whom he attended at St. Bartholomew's Hospital.

British Hospitals

Let us review briefly the provision of hospitals in this country before and since Harvey's time. While medicine was dominated by the Church, under the Saxons and Normans, many hospitals were founded; we have written records of over eight hundred, and the majority of them survived to Tudor times. In 1534, Henry VIII broke with the Pope and soon set about the suppression of the religious houses. A statute of 1545 alleges that "governors and wardens of hospitals, or the greatest number of them, did not exercise due authority and expend the revenues in alms according to the foundation." The object of the Act was "to bring them into a more decent and convenient order." At the same time assurance was given that the King would not suffer "poor and miserable people to be unrelieved." Political propaganda is no new thing. Poor and miserable people did go unrelieved, for the hospitals were closed and deserted. Pressure by the citizens of London led in due course to the reopening of St. Bartholomew's and St. Thomas's, but these seem to have been the only two hospitals in London in Harvey's time, apart from St. Mary's of Bethlehem for the insane. In other parts of the country

there were only a few vestiges of the old foundations. No renaissance of hospital establishment occurred until the eighteenth century, but then the movement grew and flourished. In quick succession came the Westminster, Guy's, St. George's, the London, the Royal Infirmary in Edinburgh, and similar institutions in all the larger cities. By the end of the eighteenth century some forty important hospitals had been established, and in recent years the number of voluntary hospitals exceeded nine hundred.

These hospitals were not of equal size or merit. They were diverse in tradition, function, and administration. They were born and grew according to the need and the enterprise of the community, but they had certain features in common. They were modelled on the ancient foundations which had so well stood the test of centuries. They were governed by a group of laymen, usually men and women of proved ability and integrity, known and respected for their achievements in their own walks of life. They worked without fee or reward. In partnership with them was a medical staff, visiting or honorary, who received a token or peppercorn stipend, sufficient perhaps to pay their travelling expenses between home and hospital. The medical staff were responsible for the investigation and treatment of the patients allotted to them, and every member of this visiting staff was a member of the medical committee of the hospital. This committee advised the lay governors on all matters within their competence, and the governors referred to them all questions having a direct bearing on the medical and surgical work of the hospital. To quote from Harvey's great contemporary, Shakespeare, "I tell you that which you yourselves do know," and I hope that I shall not outwear your patience.

Appointments to the staff of the hospital were made by the governors, but in fact they depended on election by their colleagues acting in concert, of recent years with the help of external referees or assessors. I know of no other method so free of fear or favour, or which has given rise to fewer wrong decisions. The medical committees have advised the governors, in particular, concerning improvements in hospital equipment and accommodation required to make available to the patients the advances in medical science. It has been a point of honour with the medical committees to refrain from unreasonable demands, and it has been the constant endeavour of the lay governors to keep their hospital in the highest state of efficiency. Many of them have set an inspiring example of unselfish service, and out of this has grown a living corporate spirit in the voluntary hospitals. Their independence of central authority gave them individual character, vitality, and adaptability. They were institutions in which men and women were proud to work for no proportionate financial reward.

The service given by the voluntary hospitals to the public and to humanity in general has been no mean contribution. For many years in co-operation with the general practitioners they undertook the care of the poor in most cases of acute illness and severe injury.

In association with the universities they have been responsible for medical education. At first the students' fees went to the physicians and surgeons who taught in the wards and theatres, and the rewards were very high indeed by our standards. On the organization of medical schools, the clinicians gave up the major part, and in some hospitals the whole, of their teaching fees in order to finance the building, equipment, and staffing of the departments for preclinical teaching.

The increasing demand for hospital service, and its continuous elaboration, may be traced more or less directly

to Harvey's awakening of medicine from its long sleep. As a combined clinician and investigator he had worthy successors. Sydenham's work on fevers opened men's minds to the conception of specific infections. John Hunter established the principles of research in physiology and surgery. Edward Jenner laid the foundation-stone of immunology: a statue in Boulogne records his landing there to introduce vaccination into France at a time when our two countries were at war. Addison demonstrated the nature of pernicious anaemia, and with his description of the effects of disease of the suprarenals was a pioneer in the study of the ductless glands. Accurate knowledge of kidney disease dates from Bright. Anaesthesia was made practicable by Simpson, and all the great advances of surgery stem from Lister. Patrick Manson is known as the father of tropical medicine. Similar advances continue in our own time: those of Mott in mental disease, Mackenzie and Lewis in diseases of the heart, Gowland Hopkins and the Mellanbys in vitamins, Fleming and Florey in antibiotics. Medicine is not national and cannot flourish when confined; but we have a right to be proud of our share in fundamental discoveries, and most, if not all, of these workers were products of our voluntary hospitals.

Increasing elaboration of the methods of investigation and treatment necessitated the establishment of special departments, and at the same time attracted increasing numbers of patients to the hospitals, so that the visiting staffs had to cope with a vast free consulting service, which grew more rapidly after the passage of the Insurance Act. The cost in new building and equipment was heavy, but the hospitals expanded to meet the new requirements, drawing aid from the King's Fund and from contributory schemes.

Florence Nightingale

No individual has done more for the improvement of our hospitals and for the efficient and humane practice of medicine and surgery than Florence Nightingale. Her establishment of a training institute for nurses at St. Thomas's Hospital in 1859 led to the setting up of similar schools in all the large hospitals of this country. We may be thankful that we work under conditions revolutionized by her vision and determination. The nurses, doubly inspired by their foundress and by the corporate tradition of the various institutions in which they worked, raised our hospitals to a new excellence. Sir Henry Burdett, author of that standard work *Hospitals and Asylums of the World*, and originator of King Edward's Hospital Fund, did not hesitate to criticize those of our hospitals which he found inefficient. Influenced, perhaps, by his memories of Florence Nightingale's exposures of "officialism" in her reformation of the military hospitals in the Crimea, he wrote:

"Anything more opposed to the best interests of the people than the substitution of State hospitals for the voluntary hospitals as they at present exist cannot be imagined. . . . We believe and hope therefore that the day is far distant when any serious effort will be made to substitute State hospitals for the noble medical charities which are at one and the same time the wonder of foreigners and the just glory and pride of the British nation."

Burdett was writing in 1900, a time made distant by great changes in the history of nations.

Florence Nightingale accomplished other reforms besides the reorganization of hospitals in the Crimea and the widespread establishment of training schools for nurses. Illness now confined her to bed for the rest of her life, but she kept in touch with many of the nurses who had been trained in her institute at St. Thomas's. One of them wrote to her

from the Workhouse Infirmary at Liverpool and described the conditions in which the patients wore the same shirts for seven weeks and bedclothes were not washed for months. Such information as this she used to persuade the authorities to draft the Act of 1867 which separated the Poor Law infirmaries from the workhouse and provided them with resident medical superintendents. This was not all she wanted, and she said, "This is a beginning; we shall get more in time." In 1929 these institutions became the responsibility of the county and county borough authorities, since when many of them have attained a very high standard.

The Impact of War

In the recent war the voluntary hospitals were integrated with those of the local authorities, and a friendly partnership was in most cases established. They were placed under an Emergency Medical Service, and had an instructive experience of centralized control in an attenuated form. They learned something of its benefits and drawbacks, and minimized the latter by their traditional adaptability, especially in misinterpreting regulations and instructions which would have prevented efficient and humane treatment of their patients.

The hospitals in London were instructed to lock their gates when aerial bombardment was heavy, in order to prevent the breaking in of panic-stricken mobs. To the best of my knowledge only one hospital was mobbed. When heavy bombs struck the main block and destroyed both lift shafts and staircases a message was shouted from street to street that "Guy's is afire," and the men of Bermondsey and Southwark came out of their cellars and shelters in their hundreds and helped to carry the patients down the outside of the stricken building.

There was a great discrepancy in the efficiency of the hospital services provided by the different county authorities. Some were admirable and others miserably incompetent. Their responsibilities and obligations were heavy: one of the most troublesome was the provision of adequate and efficient institutional accommodation for those suffering from pulmonary tuberculosis.

In the good areas a patient urgently requiring admission would be taken into hospital within twenty-four hours, and the average period of waiting for a sanatorium vacancy for less acute cases did not exceed four weeks. On the outbreak of war a large proportion of the beds in tuberculosis institutions were emptied for the service of war casualties. A central administration which had failed to prepare for war thus repeated the mistakes of 1914. The premature return of infectious patients to their homes was followed by a steep rise in the tuberculosis rate, and there was a spectacular increase in child deaths from tuberculous meningitis. The hospital service for tuberculosis has not yet recovered from the disorganization resulting from this expropriation. Five thousand of its beds are still closed for want of staff. Patients in urgent need of treatment must wait from six to twelve months for admission to sanatoria or even to hospitals. Patients are lying in their homes begging for the treatment which can only be given in hospital, and which cannot be obtained until it is too late. Is there a Tudor echo in the recent assurance that the patients shall not suffer?

Ministry of Health

The Ministry of Health dates from 1919, and already has a distinguished record in preventive medicine. In the recent war it administered the Emergency Medical Service and so undertook responsibility for the treatment of

patients in many different types of hospitals. Experience so gained suggested the advisability of perpetuating the control, especially as it was said that the increasing cost of hospital maintenance and the heavy taxation of those who had heretofore financed the voluntary hospitals would make it impossible for them to survive on a voluntary basis. Lord Dawson's scheme for reorganization of the medical services, published in 1920, was revived and transfigured in the Beveridge Report. When the latter was published, it seemed to some of us that insufficient attention had been paid to the essentials which stimulate individuals and institutions to strive for progress in the science and practice of our calling. By memorandum and by word of mouth we reminded a former Minister of Health of the work of Florence Nightingale. We even suggested that this plan might undo some of the work that she had done, and that nurses might not care to work under such a scheme. We received no more encouragement than we expected. Others explained to us that Government money would be used, and that he who pays the piper calls the tune. This seemed to us an over-simplification: if each individual had his own piper he might get the tune he desired. In this case we are all paying the piper. Under a central authority there are millions who pay, and there is only one piper, remote in his office. Many of us call for different tunes. The piper has not the music for all the tunes, and some of them are unfamiliar to him. In the end, the piper is apt to play the tune which comes most easily to him, the one that suits his pipe.

State Hospitals

Our hospitals are now State hospitals: let us see to it that the change is not so disastrous as Sir Henry Burdett feared. We have inherited a splendid tradition from our great predecessors. Tradition grows like a tree, gathering strength by degrees; but even a mighty tree can be cut down in a few hours. The tradition of the teaching hospitals is being respected; they are being allowed to keep their constitution and character. They still have boards of governors; but there is cause for regret that some of the most outstanding members of these boards, individuals of special distinction in the recent history of the voluntary hospitals, should have been superseded in the general reorganization.

Some of the other hospitals seem to be faring less well. Fifty thousand beds are out of service, largely, we are told, for lack of trained nurses. Some of the smaller voluntary hospitals have been closed. The character of others is undergoing a change. A recent official communication informs us that a hospital for pulmonary disease some sixty miles from London will no longer include consulting physicians on its staff. We are given to understand that, though their visits might be desirable, they cannot be fitted into the administrative pattern set by an Act of Parliament. We hear rumours of plans to standardize the design and limit the variety of instruments and chemical preparations used in the treatment of patients.

There are bound to be difficulties at the inception of a new service, and it is easy to criticize. We are here to help and not to hinder, but we shall do less than our duty if we fail to call attention in good time to inadvertences which tend to destroy the will of the individual to serve the community. The progress of medicine and the development of our hospitals have resulted from freedom and diversity, not from standardization and conformity.

With due humility let us ask that administrative departments of Government when taking over the control of our hospitals shall themselves absorb something of the spirit

and tradition which has made them live and grow. Those who serve the sick cannot give of their best unless they possess the sense of urgency and personal responsibility. If Government control is to be beneficial to the hospitals there must be a new spirit in the ministries. There seems a need for more effective co-ordination between Government departments, and a stronger determination to avoid enmeshing themselves and us in a web of regulations and restraints. We would urge them to consider whether a multiplicity of committees may not be a hindrance to those who are striving to heal the sick.

I have strayed far from the course indicated by Harvey for the guidance of those who were to deliver the Oration, so make amends by reminding you again of his exhortation that we should search and study out the secrets of Nature by way of experiment; and also, for the honour of the profession, continue in mutual love and affection among ourselves.

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I. P. PAVLOV*

BY

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It is both a great privilege and a great pleasure to take part in the centenary commemoration of the outstanding Russian physiologist Ivan Petrovich Pavlov. It is also a privilege to revive the memory of my work with this great scientist—work which, though now belonging to the past, I always recall with great affection.

I shall first survey briefly Pavlov's work and its significance for modern science, and then to give personal reminiscences of my association with him. I shall not deal here with the first phase of his work, which was devoted to the physiology of digestion and which alone was already sufficient to establish his permanent reputation, but with the second phase, in which he created a new branch of physiology—namely, the physiology of higher nervous activity.

To begin with, take a look at the study of physiology of the central nervous system at the stage it had reached by the turn of the century—that is, at the time when Pavlov was beginning his work. The rapid development of neurophysiology in the second half of the nineteenth century, achieved by physiologists and clinical workers such as Flourens, Hitzig and Fritsch, Ferrier, Goltz, Sherrington, Hughlings Jackson, Broca—to mention only the most outstanding ones—led to the establishment beyond doubt of the fact that mental processes depend on the function of the brain, more particularly of its highest and most complex part, the cerebral cortex. This does not mean that this fact had not been recognized earlier, but the research carried out by the scientists I have mentioned developed it in a direct and, so to speak, tangible manner.

On the one hand, the experiments of Hitzig and Fritsch, Ferrier, and others demonstrated that certain mental processes are localized to certain parts of the brain—a finding

*Lecture delivered on August 29, 1949, at the Polish Cultural Institute, London, on the occasion of the commemoration of the centenary of Pavlov's birth.