into the sea of odds and ends still waiting for their purpose to appear?

Will the action, whatever it be that may be done by you, help it, hinder it, or be quite inoperative, and unsuited to the end? Who can tell? The vitality and activity of the organ are pioneering on the outskirts of the origin of Life, where their very existence is always at stake, and where the requisites are quite unfamiliar to you and me.

Clearly every single dose of medicine, every act done to influence such occult conditions, is an experiment. The social instinct is very hypersensitive to the use of this word in relation to disease; but why? We all when ill become the prey of experiment. Even the man who does nothing is not exempt. I suppose that there has never been a dose of medicine administered that has not been in some measure an experiment. "It subdues pain," you say. Yes. "It strengthens the heart." May be. "It arrests disease." No doubt. But how and why? They are the questions. And if it does these things for one of us, why does it fail for others? Further, what else is it doing in the economy at large—is its mission ended when your behests are accomplished? What about thyroid extract, Coley's fluid, atoxyl, and all the vaccines, serums, and so on, that are now coming into use? All powerful, even heroic, attempts to cure disease, what are they all in their use but experiments? And although the wind be tempered, as far as possible, to the shorn lamb—it is here that knowledge and experience come in—they are, and must be, experiments attended with risk. There are some who think and speak of experiments as if they were performed only upon the lower animals and the poor who cannot help themselves. The fact is that by experiments the worlds have grown; that experimentation is the one fundamental necessity of all progress, and the whole of animal life—life of every kind—to reap the benefit must share the risks and chance the pain. So each and all of us *must think* on these things, and try to give such individual thought and observation as is possible to the how and why of ordinary physiological reactions. We depend upon leechdom too much, and spend our time in thinking our leeches fools on the one hand or an all-knowing Providence on the other, and seem to be prone to handle the wrong end of the stick when it comes to a pinch. But it is not wise to leave these matters entirely to the republic of letters. Let us learn to steer our own craft amid the smoother eddies and currents of life's stream, so that when the call to the pilot comes we may be able, as we shall, to help him to apply his principles, derived from wider sources and more tutored insight, to the special needs of our immediate stress. As pilots we may also take heed of this.

And then what of the prospect?

With problems such as these before an expanding science, it cannot be one of royal pageant, or of easy achievement, and it is certain that the future triumphs over disease will only unfold themselves to an ever widening horizon that embraces all the latest advances of physical science as they bear upon the function of living. Yet would the possibilities seem to be limitless. With all the added information of recent years, the suggestions that have come to us from all directions by way of electricity and light and the ether that surrounds us, with all the forces that make towards us and for us, merging all Nature into one ordered whole, who can do other than put to himself this question:

"Can it indeed be that we are come to look unto the rock whence we were hewn?" Yet, with spectroscopic insight, with darkness dawning into light, with mental flashes borne across the storm, with all these new aspects of Nature surging on us, who shall say that we are now familiar with all forms of living energy—that there are no other sources still to be made known to us? In the sigh of the wind, the spirit of a voice, the magnetism of a presence or a touch, or that ineffable something in face or form that the painter tries to catch, is there nothing travelling that other way?

I trust the larger hope.

But to inquire into final causes, it has been said, inasmuch as they are beyond the grasp of the human intellect, is not the pursuit of a scientific mind. Such an opinion, since it would seem to ignore the stimulus, the insight, the instigations of the

imagination, must be belated, if ever it could have been true. Still, reverencing as I do that attitude of mind thus expressed not long ago by Mr. Arthur Balfour, that to make the best of the future one must never ignore the past, you may, perhaps, think that, could Harvey have returned to us for this afternoon, he *might* have looked askance at the future, to which I have committed the influence of his immortality and the trend of the set purpose of his life. But methinks he would have absolved me, for where is that knowledgeable man—let him step forward that we may look at him—who has deliberately foresworn that pleasure—I will venture even to say profit—of a mind set free to roam awhile, who does not dream even while he works, whose mood is not rather:

And I who with expectant eyes
Have fared across the star-lit foam,
See through my dreams a new sun rise,
To conquer unachieved skies,
And bring the dreamer home.

It is only thus that Past, Present, and Future hold in one; why the Harveian Orator at this annual festival is bidden by our Master's expressed will to commemorate the Past. And the Fellows will count it indeed happy and appropriate that on such a day, by the filial and devoted generosity of its President, the College should receive its latest and priceless benefaction of the eleven recently discovered autograph letters, the very *ipsissima scripta* of William Harvey. Alive as these are with human interest, how the shade of Harvey seems to become re-embodied, and the passage of time to have been for the moment stayed!

The Past! I sometimes think, Sir, that the mundane casket of our Harveian librarian must be as full of ghosts as a queen bee is of embryonic honey. These walls are alive with memories of benefactors of the college. The dead herein still speak to us, and here is harboured the tomb of many a brilliant but buried thought awaiting its emancipation that still tarries. And with Pavy, Hughlings-Jackson, Wilks, Allchin, and others dear to us all gathered to the fathers of medicine almost since St. Luke's day last, what an addition to the supporters of the arms of this our ancient college within the bygone year. And of the *less* recent past, who is there entering this library and making his obeisance to your presidential chair that does not experience the calm and the charm of a great contentment when he remembers that the afterglow of Harvey and his followers still guides him on to that yet more perfect day of ever-increasing knowledge and less disputable truth?

And though long sunk from sight, I know,
The glory of your afterglow
Will never wholly fade.

PELLAGRA IN THE BRITISH ISLANDS.

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Of all known diseases pellagra is certainly the one which escapes recognition most easily, not that it lacks individuality, because few diseases are better characterized in their full manifestation; not that it is of little importance, because few diseases are more harmful and deadly, but because it varies greatly in the nature, sequence and intensity of its symptoms; because it may remain clinically latent for years in the patient and epidemically dormant for long periods in a given region; because it avoids crowded cities and, as a rule, strikes the uncared-for peasant in remote country districts; because it principally affects the young with manifestations usually so mild that it is either overlooked or unheeded; because it breaks out in the mature and elderly under the stress of lowered resistance following in the wake of poverty and famine and engrafting itself on to other diseases; and because, in most countries, it is concealed with shame as the brand of destitution and madness.

Ignorance and superstition in the patient, lack of knowledge and indifference in the physician, have not only added to the burden of the unfortunate pellagrin, but also greatly retarded the recognition, elucidation, and eradication of this grave and insidious disease, a prolific, though frequently unrecognized, cause of insanity.

It is no easy matter to trace far back the history of indubitable pellagra, because, in the past, it was confounded with many other diseases, such as scurvy, eczema, leprosy, syphilis, erysipelas, ankylostomiasis, etc.

Don Gaspar Casal, the learned and able physician of Philip V of Spain, as early as 1735, when practising in Oviedo, was the first to grasp the individuality and significance of this triform, protean disease, which he portrayed most skilfully in his *Memorias de Historia Natural y Medica de Asturias*.

In Italy the disease was first recognized in Feltre, about 1740, by Professor Giuseppe Antonio Pujati, and soon after, in Friul, by Drs. Nascimbeni and Anton-Gaetano Pujati, but nothing was published until 1771, when Francesco Frapolli observed it in the country round Milan and described it under the popular name of "pelagra," by which it had long been known to the peasantry in Lombardy. The recognition of pellagra in Italy towards the middle of the eighteenth century does not imply, as the majority of Italian physicians have hitherto held, that the disease had been imported or had arisen *de novo* at that time, because not only did Frapolli himself say it was "as old as the sun," but we have ample evidence to show that, at the time of its discovery, it was already widely distributed throughout North and Central Italy, and occupied, amongst the foot-hills of the Alps and Apennines, those very same localities in which it is now stationed. This, of course, means that it must have existed for centuries previously, because, like malaria, pellagra has never shown any tendency to rapid spread from place to place, but only fluctuations of prevalence and virulence within its endemic areas, which areas are everywhere associated with swift-flowing streams, just like malarious localities are associated with stagnant waters.

In France the disease was first recognized by Jean Hameau, a precursor of Pasteur, and famous for his work on *Les Virus*. Hameau began to observe pellagra in 1818, at La Teste de Buch, but the disease had long been known to the shepherds of the Landes, who had popular names for the disease and went to implore the saints at special shrines for deliverance—as at Bascons, for instance, where they got some ointment from off the transfigured hands of a local crucifix and besmeared with it their own discoloured and burning extremities.

In the Landes of Gascony pellagra used to be very prevalent about the banks of the Leyre and Ciron rivers and along the streams running from the central plateau to the sea coast. Since about 1890, owing to great engineering, agricultural, and piscicultural changes, both pellagra and malaria have greatly diminished, but pellagra has not entirely disappeared, as Régis and Marie had led us to believe. Cases still continue to crop up in the Landes and in the river valleys of the Pyrenean region, as we were able to ascertain during our recent investigations in the south-west of France.

The history of the discovery of pellagra in other countries—such as Hungary, Roumania, Egypt, etc.—shows everywhere, again and again, the same late and fortuitous recognition, notwithstanding the antiquity and wide distribution of the disease. Indeed, in many cases, as, for example, in Transylvania, Egypt, and Algeria, even after its presence had been unmistakably pointed out by competent men, it was long before it became generally acknowledged. Indeed, Hirsch, in his *Handbook of Geographical and Historical Pathology*, goes so far as to say that "The statements as to the occurrence of pellagra in Hungary and the Banat, in Egypt, and in Algiers, are based upon quite untrustworthy information."

Another curious feature in the history of pellagra is the fact that in countries where it has been known to prevail endemically for over a century, as in Spain, Italy, and France, we observe from time to time a peculiar tendency to consider pellagra a thing of the past.

No instance of oversight could be more instructive than that of the recent recognition of pellagra in

the United States of America. Until five or six years ago the disease was looked upon as non-existent in North America, and for this reason was not even mentioned in medical textbooks. Yet it existed, and Grey and Tyler had both in 1864 recorded one case each. Later, a perusal of the old case-books of lunatic asylums brought to light other earlier cases, such as those of Trezevant in 1834. But it was not until 1907, when Drs. J. W. Babcock and J. J. Watson raised the alarm, that pellagra became a subject of inquiry in the United States. Now we know that the disease prevails in no less than thirty-three States, and that there are over 10,000 indubitable cases on record. Recent importation and spontaneous origin are quite out of the question. Only centuries of the prevalence of the disease can explain the wide range of pellagra in North America, extending from the Atlantic to the Pacific Ocean and from the Gulf Coast to the Great Lakes, especially when we consider the peculiar topographic distribution of the disease, which, in America as in every other affected country, is limited to the foreland or "Piedmont Section" of mountain ranges, and more particularly to the valley tracts of swift-flowing streams.

Although so far the British Islands have not been looked upon as a likely field for pellagra, we have no hesitation in stating that the disease is endemic, and has long been endemic in various parts of the United Kingdom. Two certain and quite typical cases have already been described, one by Dr. James C. Howden, in 1866, the other by Drs. R. Dods Brown and R. Cranston Low in 1909. Then we have earlier though vague information which acquires strength in the light of these cases, and, lastly, the result of our own recent investigations in the eastern districts of Scotland between the Firth of Forth and Pentland Firth, including the knowledge of two other grave and typical cases as yet unrecorded, one studied by Dr. R. Cranston Low, the other under the care of Dr. Box, sub-dean of St. Thomas's Hospital, London.

So long as pellagra was looked upon as a kind of poisoning due to the eating of damaged maize, or to some form of cachexia peculiar to the insane, the occurrence of one or two isolated cases of the disease could have relatively small importance, but since we have shown that pellagra is an infectious insect-borne disease the recognition of a few cases in separate places and at various times acquires a very different significance. It indicates the overlooking of a widespread and long-standing endemic disease of very grave nature.

So far as we are aware, the first notice regarding the presence of pellagra in the British Islands is the one given by Dr. E. Billod.¹

Billod states that on December 14th, 1860, he received a letter from Dr. Brown, Inspector-General of the Scottish Lunatic Asylums, informing him that during an inspection in the most remote eastern parts of the island, in two idiots of the same family, he had observed an alteration of the skin which he qualifies as a kind of pellagra, adding that he had never seen any other cases of Italian pellagra, and regretting that he was unable to furnish more precise details. "I have considered it right," says Billod, "to place these cases on record, with the reserve, however, that they probably pertain to the pellagra which accompanies insanity." Believing pellagra to be a kind of cachexia due to poverty, and giving rise to an erythema under the action of the solar rays, he surmised that this pellagrous cachexia must perforce occur in Great Britain and Ireland, "where poverty is great beyond conception" (*sic*), without, however, being accompanied by any erythema, the sun in these parts not being powerful enough to occasion it. Thus one would have a *pellagra sine pellagra* such as is observed at times within the endemic centres of the disease, and analogous to *variola sine variolis*.

Very soon after the publication of Dr. Billod's work, Dr. James C. Howden, Medical Superintendent of the Montrose Royal Asylum, published² a case of typical pellagra which occurred in a woman aged 33 years, a factory spinner from Arbroath, Forfar, who was admitted into the asylum August 19th, 1863.

The next supposed case on record is one from Cheshire, England, published by Dr. Andrew Cassels Brown.³ We prefer to dismiss it, however, as doubtful. The last case published is the one described by Drs. R. Dods Brown and R. Cranston Low.⁴ It occurred in an unmarried woman aged 21 years, who was admitted to the Royal Edinburgh Asylum on July 13th, 1908, under the care of Dr. George M. Robertson. She was born in Shetland, and had lived there

all her life. The dermatitis in this case affected the face and the back of the hands, extending over the wrists and lower parts of forearms. The patient was delusional, complained of severe pain in the lower part of the back, presented spasticity of both legs, severe stomatitis, and diarrhoea.

In a paper read at the National Conference on Pellagra, in Columbia, South Carolina, U.S.A., in 1909, Dr. Sandwith stated that two cases had recently been recorded in patients who had never been out of the British Isles, but that the published accounts did not tally with the disease as he knew it. While agreeing with Dr. Sandwith with regard to Dr. Cassels Brown's case, we cannot agree with him with regard to Drs. Dods Brown and Low's case, which we consider to be a typical case of pellagra.

At the time of the International Dermatological Congress in Rome in April, 1912, we had the opportunity of taking Sir Malcolm Morris, Dr. Ian MacLeod, and Dr. R. Cranston Low to Zagarolo, a small village at the foot of the Prenestini Mountains, and showing them a number of pellagrin peasants encamped close to a typical *Simulium* stream. Dr. Low remarked that these cases and others from Northern Italy shown at the congress meetings exhibited symptoms identical with those presented by his Shetland case, and by another as yet unrecorded case from Fifeshire, which he had had the opportunity of examining in Edinburgh in 1911.

On our return to England this autumn we resolved to visit the eastern districts of Scotland, and possibly the Shetland Islands, and endeavour to ascertain all we could concerning the distribution and prevalence of pellagra in these parts. Owing to lateness of season, unfavourable meteorological conditions, and limited available time, we were unable to make as thorough and extensive a survey as we should have liked, but we were able to establish that pellagra is certainly endemic in Fifeshire, Forfarshire, Aberdeenshire, and the Shetland Islands.

Dr. Low having given us the name of the village in which his recent unpublished case had occurred, we visited it twice, and during one of these visits Dr. Low very kindly joined us. The village is Colingsburgh, halfway between Largo and Anstruther, on the eastern coast of Fifeshire. Here Mrs. R., the patient, was born and lived all her life. From time to time since the age of 8 she went for short visits to her relatives at Rothesay in Bute. She was born at a farm called Kilconquhar Mill, which is on the road between Colingsburgh and Kilconquhar, and which is situated on a slight elevation above a little stream or burn, in which we found many larvae and some pupae of Simuliidae. In the fields adjoining this stream we obtained very clear statements from the field labourers of the attacks of small biting flies coming in clouds in the early morning, and especially in the evening. Mrs. R. was about 40 years of age when she died of pellagra in 1911. The full clinical history of her case will be published in detail shortly by Dr. Low, and therefore we will restrict ourselves to the points which more directly concern us. Our knowledge is derived from Dr. Low, Dr. Bryson, the local physician under whose care the patient was, and the relatives of Mrs. R.

Mrs. R. suffered from an eruption on her face, which recurred in spring and autumn. The actual date of the commencement of this eruption was forgotten, but it was remembered that it was thought to be due to vaccination, and, if this association is correct, it probably started at a very early period of her life, a fact fully in accordance with our experience of Continental pellagra.

The eruption is stated to have been on the exposed parts of the face and arms. She is also said to have suffered from sore lips and increased amount of salivation and from diarrhoea on and off from girlhood. No history of having eaten maize could be obtained, but we were told that the patient had a peculiar habit of eating raw oatmeal, but when she acquired this habit no one remembers; apparently it was in early life. We could find no evidence of maize being used as human food in Colingsburgh, though apparently it is given to pigs. We were told that maize is often used along with other materials in the preparation of Scotch whisky, but this need not be seriously considered in this case. As regards social position, Mrs. R. appears to have been very comfortably provided for all her life. She had three children, the youngest being born in 1909. None of these children showed any signs of pellagra when inspected by us.

Dr. Bryson kindly informed us that Mrs. R. was vaguely ill after the birth of the baby in 1909, and became acutely ill in April, 1911, with a bright red erythema on the dorsum of both hands. At the time he saw her the eruption only extended to

the wrist. There was no evident eruption on the face at that time, but there was an eruption on the nates, about the size of half the palm of the hand, on either side. A peculiarity which struck him was that the eruption on the left hand showed a clear band of skin corresponding to the area covered by the wedding ring and therefore not exposed to light. There was no vaginal discharge and there was diarrhoea, especially in the morning. She was inclined to turn faint and giddy and to fall down and she became very weak. In May, 1911, the mental symptoms became pronounced and she became apathetic and lost interest in everything, while she began to look foolish, and later she was sent to Edinburgh.

Her symptoms in Edinburgh were kindly described to us by Dr. Low, who also showed us a photograph and three admirable casts he had taken of her face and arms, but, as he will eventually publish in detail this portion of her history, we refrain from further remark beyond stating that we are entirely in accord with Dr. Low that Mrs. R. was a typical pellagrin.

In Colingsburgh we had the opportunity of examining Mrs. R.'s sister, and we are inclined to believe that she is also a pellagrin. She appears to be subject to a recurring eruption, not unlike a sunburn, which affects her face and the back of her hands in spring time, and this occurs with a more permanent eczematoid condition affecting the palms of the hands, as in the case of her deceased sister. However, she has been out of the United Kingdom.

On visiting the farm where Mrs. R. was born we endeavoured to ascertain whether we could trace any pellagra in the present occupiers; and, indeed, we did see a woman and a child presenting suspicious skin lesions on hands, arms, and face, but these people were unwilling to give us any information. In the fields close by we met a woman with erythematous eruption on the face, and a history of eruption on the dorsal surface of both hands and forearms, and this case we also regard with suspicion, even after considering the fact that she suffers from seborrhoea.

In the Royal Montrose Asylum we were shown a Shetland Islander from Uist, who was admitted to the Edinburgh Asylum on June 2nd, 1880, and thence transferred to the Montrose Asylum on June 30th, 1881, where he has been ever since.

He is suffering from chronic dementia, is not epileptic, and is said to have been suicidal before admission. The history is not very good; we are told that on admission he was unable to answer questions coherently, that he was restless, excited, and dirty in his habits. He was often wild, and has assaulted people. His left pupil was larger than the right one for some time. There is no doubt that from time to time he has suffered from diarrhoea, and that he constantly spits about owing to excess of salivation. The ward attendant told us that his hands have presented an eruption from time to time, especially about spring time, but this is not recorded in the history. The epidermis on dorsum of hands is in parts thickened, in parts atrophic. The feet and face are normal.

At the Aberdeen Royal Asylum the superintendent told us of a possible case from New Aberdour, Aberdeenshire, which had recently died in the asylum. The patient had an erythematous condition of the face and hands, and his mental state was that of chronic dementia. His skin lesions were recognized by the superintendent and the senior assistant medical officer as similar to those shown in our photographs of Italian pellagrins.

On the Ugie, a typical *Simulium* stream, near Peterhead, Aberdeenshire, we met several children presenting the peculiar skin lesions characteristic of pellagrin children after the subsidence of the eruptive stage.

Finally, on our return to London, Dr. Sandwith kindly informed us of the presence of a suspicious case at St. Thomas's Hospital, under the care of Dr. Box, and, thanks to the courtesy of the latter we were able to see a most severe and typical case in a boy who had never been out of England. The following is a note by Dr. Box:

"Recently there has been in St. Thomas's Hospital under my care an English boy suffering from the nervous and cutaneous manifestations of pellagra.

"The patient, who was 8 years old, was born at Leyton in Essex, moved thence at the age of 5 to Catford, and later to Slough. His illness first attracted attention in June of this year owing to an epileptiform attack. He died in hospital on October 18th.

"An extremely interesting fact is that this boy's brother was also under my care in 1910 with symptoms pointing to combined sclerosis of the spinal cord. His malady was not then recognized as pellagra. It was of longer duration than was the case with the younger brother, commencing soon after the age of 4 with difficulty in walking; the boy, however, did not come under observation until he was 11. The mother

states that his skin eruption was in every respect similar to that of the younger brother, and showed, as did the other, marked seasonal variations. The elder boy died early in 1911, and no *post-mortem* examination was obtained. It is hoped that a complete report of the first-mentioned case, together with the pathological findings, may be published in due course."

We believe that the information so far collected is sufficient to prove that for an undetermined but long time pellagra has endemically prevailed in parts of the United Kingdom, and that, notwithstanding the recognition and publication of two grave typical cases, the disease has been generally overlooked in its milder and more obscure forms.

The presence of pellagra in the British Islands is of geographic interest, because hitherto the disease was believed to be limited northwards by the forty-fifth parallel. Etiologically, its presence in the United Kingdom is of importance, because here its causation cannot be reasonably explained by the consumption of either sound or bad maize, and its topographic distribution shows that here, as elsewhere, it is linked to the swift-flowing, Simulium-infected streams. Sociologically, the disease calls for the most urgent attention. Pellagra is an insidious disease, either rapidly fatal or of long intermittent course, leading to insanity. The pellagrous psychical disturbances are as many-sided and as obscure as the somatic manifestations of the disease, but the salient feature is an intermittent and progressive amentia, often assuming a semblance of melancholia and exhibiting from time to time regular outbursts of maniacal excitement. In some cases there may be all the appearances of progressive paralysis. Dementia is the invariable termination, unless the patient be cured, or carried off sooner by some intercurrent disease or mere exhaustion of the vital powers.

A careful reading of the old case-records of our lunatic asylums will no doubt bring to light many cases of overlooked pellagra; but—and this is far more important—we trust that henceforth physicians will be on the look-out for this disease, and that they will make a thorough search for the milder forms which, as our experience shows, very easily escape detection.

However dormant it may be at the present time, a fatal, insanity-causing disease, such as pellagra is, cannot be allowed to continue unchecked in its progress, and it behoves us to take the matter very seriously in hand.

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MITRAL STENOSIS: PERIPHERAL EMBOLI CAUSING PARTIAL MONOPLÉGIA WITH SYMPTOMS SIMULATING CEREBRAL EMBOLISM.

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THIS case is of interest because on both occasions on which embolism occurred in a limb artery the attendant symptoms accurately simulated those associated with cerebral embolism. Thus on each occasion the patient was the subject of partial monoplegia, with attendant nausea and giddiness.

Additional interest is afforded by the fact that death was absolutely sudden, and was found to be due to the presence of a ball thrombus in the right auricle.

The patient, a married woman aged 42, had had mitral disease, following an attack of rheumatic fever six years previously.

The first embolus affected the left upper limb. It occurred eighteen days before admission to hospital. The patient while stooping suddenly felt sick and giddy, and the left forearm and hand fell powerless to the side. She retched but did not vomit, and she saw dark spots in front of the eyes. The second embolus, affecting the left lower limb, occurred three days later. "Without warning" she again felt sick and giddy, again saw dark spots before the eyes, and simultaneously "lost power" in the left leg and foot.

She was recommended as a case of cerebral embolism to University College Hospital, where she was admitted

under the care of Sir John Rose Bradford, to whom I am indebted for permission to publish this case.

Considerable trophic changes in the affected limbs caused some doubt of this diagnosis, and the real state of affairs was revealed on noticing that the left radial pulse was absent.

Condition on Admission.

The facial muscles showed no paralysis or weakness. The skin of the left forearm and hand was cold, dry, and shining, and blebs containing serous fluid were present on the tip of each finger. Movements at the left shoulder and elbow were weaker than on the right. Pronation was only possible through an angle of 45°; supination was weak, but complete. Flexion and extension at the wrist and of the fingers were both markedly limited. No pulsation could be felt below the first part of the axillary artery. In the left lower limb also marked trophic changes were present, and pulsation was absent from some of the main arteries. The skin below the knee was white, shining, and oedematous. It was colder than on the right side. Over the front of the leg was an oval erythematous area, 8 in. long, in the centre of which was a smaller oval area, 3 in. in length, where the skin was blue. Over all this area the skin was hyperaesthetic. There was a small patch of anaesthesia on the dorsum of the left foot.

There was no paralysis on the left lower limb. Movements were weaker than on the right side, but the impairment was due rather to pain evoked than to any actual loss of power. Both knee-jerks were present; there was no ankle clonus, and the plantar responses were flexor. Sphincter control was normal. Examination of the heart showed well-marked mitral disease.

Death.

The patient died suddenly four days after admission. She was leaning over the bed, when she quickly raised her head and shoulders, became intensely cyanosed, made a few stertorous efforts at respiration and then stopped breathing. She had spoken to a nurse a few minutes before and had then appeared perfectly well.

Necropsy.

The *post-mortem* examination confirmed the opinions formed as to the nature and origin of the lesions in the upper and lower limbs and also supplied the explanation of the sudden death.

There were no cerebral lesions to account for the loss of power in the limbs.

As the right auricle was being cut open, there fell out an oval *ante-mortem* clot 2½ in. in its longer diameter. The endocardium of the walls and valves was smooth and free from adherent clot, so that the thrombus lay quite free within the auricle. The mitral orifice was buttonhole in shape and only admitted the tip of one finger. There were no vegetations to suggest malignant endocarditis.

The upper part of the left brachial artery was blocked by a reddish-grey clot evidently of recent formation. Another thrombus filled the lower half of the left femoral and the whole of the popliteal arteries below. This thrombus was white and organized. Hence, seeing that the leg lesion was the more recent, there must have been an earlier embolus in the femoral artery which had caused no symptoms, and either an extension of this or a second embolus must have been responsible for the symptoms and signs affecting the leg as described above. Whatever may be the correct explanation of the second series of symptoms, the additional interference with the blood supply brought about the subsequent commencing gangrene of the skin covering the tibia.

Thus the symptoms of nausea and giddiness accompanying a partial monoplegia were on both occasions misleading. No lesion to account for these could afterwards be found in the central nervous system. The loss of power in both instances was due to the local anaemia. The nausea and giddiness are more difficult to explain. They may only have been expressions of a general circulatory disturbance consequent upon the occurrence of a sudden peripheral embolism, or possibly they were due to reflexes originated from the walls of the plugged vessel. In this case the patient would be expected to have noticed some pain in the limb at the time of the embolism. Pain, however, was absent on both occasions. Hence the exact cause of the nausea and giddiness must be left open to conjecture.