stinent (B), but it was this substance which determined hypertoxic diphtheria. "B" promoted the penetration of the tissues by "A", and in excess, led to a great increase in the size of the local lesion, in the gelatinous oedema around it, in the amount of necrosis, and in the tendency to wasting and paralysis. Antitoxin containing a high proportion of the antibody to A, but relatively little of that to B. On the administration of antitoxin clinically, therefore, B was not neutralized and the antitoxin was rendered non-avid, dissociation of toxin from antitoxin took place on dilution in the body, and the toxaemia continued unabated. Antitoxins rich in the antibody to B were required for the treatment of diphtheria toxemia.

Dr. C. J. McSweeney recapitulated the clinical manifestations of hypertoxic diphtheria: faucial oedema which might even simulate quinsy; rapidly developing cervical cellulitis; cardiovascular failure, most marked just before the onset of symptoms, and cardiovascular failure on or before the tenth or twelfth day. He then classified under four grades all cases admitted to Cork Street Hospital. In Grade I the membrane was confined to the tonsils, or was purely laryngeal, and took the form of speckling, spotting, or scattered patching. In Grade II the membrane involved much of the palatine, not involving the palate, or in the larynx with faucial lesions not extending to the pillars. In these cases toxaemia was present and paralytic sequelae not uncommon. If death occurred in either of these grades it was due to some intercurrent cause, not toxaemia. In Grade III the membrane involved the palate, with or without involvement of the uvula and/or nasal discharge. Toxaemia in this grade was considerable, and there was usually much faucial oedema, bull neck, and multiple paralyses. These cases constituted fully 75% of the "gravis" diphtheria problem. In Grade IV there were toxic haemorrhages from mucous membranes and into subcutaneous tissues, with breathing at the site of injections, associated with lesions in the nasopharynx and much oedema of the throat. Toxaemia here was extreme and cardiovascular failure inevitable when commercial antitoxins were used. Multiple paralyses were almost inevitable in survivors, and these cases constituted the remaining 25% of the "gravis" problem. The grades represented stages of the process of circumferential spread of the membrane, and the toxemic diphtheria grades might be reached through within twenty-four or thirty-six hours. The degree of toxaemia was indicated by the sum of the two factors: extent of membrane, and oedema. No anxiety need be felt about paralyses in Grade II cases if commercial antitoxin were given reasonably promptly. For some reason, once the membrane was crossed the faucial or laryngeal paralyses rapidly developed; the cervical or faucial oedema and membrane was much accelerated; there was little or no albumin in the urine at any time; only a few paralytic sequelae were observed; the bull neck often disappeared within forty-eight hours of administration of the new serum; and there was no appreciable fall of blood pressure but, indeed, in some cases a rise. Rich B factor serum had been used up; twenty consecutive Grade III and IV cases had been treated with serum taken from the same horse, only at a much later stage, when little or no anti-B factor was present—thus corresponding with commercial antitoxin. The case fatality rate had been 40%. The clinical proof of Dr. O'Meara's thesis appeared to be complete. Unfortunately serum rich in anti-B factor was not at present available.

Prof. Henry Moore characterized this as a monumental communication. Dr. A. R. Parsons asked why Dr. McSweeney had drawn the line at 120,000 units; he himself never gave more than 100,000 units. He asked where the limit should be drawn, and if the serum neutralized in the same way as an antitoxin? Dr. T. O. Graham said that the toxicity of diphtheria in Dublin was very high compared with other parts of the world. The variability in antitoxic properties of sera was probably due to varying amounts of B antibody. Dr. J. McCann asked if it was now wise to give large doses of streptococcal serum in cases complicated by a secondary streptococcal infection. Dr. W. R. F. Collins asked if conventional serum had tried to be better. Renal suprarenal extract had been used to tide patients over the critical stage of fall of blood pressure. Prof. L. Abrahamson said that he had recently become aware that diphtheria mortality was creeping up and that serum was losing its efficacy in some cases. Prof. Hans Sachs stressed the fact that the pharmacological action of diphtheria serum was not really helpful from the human point of view, though it had antitoxic value as a serum. He wondered if the problem of avidity were really related to the B toxin. Some substances which intensified the action of toxin also intensified the action of other toxins, and the bacilli might produce not the real toxin but a pro-toxin. Dr. Brendan O'Brien asked if in Grades III and IV there were any cases known to have been immunized by the ordinary methods available. Dr. Oliver Fitzgerald asked if the B substance could be removed and A only injected; if so, would there be no reaction at all? Dr. Alan Thompson asked whether in the first thirty-six hours there would be better results from using a mixture of avid serum and ordinary commercial serum, providing both anti-A and anti-B substances.

Local News

SCOTLAND

Orthopaedic Care in Scotland

In an address to the Edinburgh Women's Luncheon Club on February 19 Dr. J. M. Mackintosh, Chief Medical Officer of the Department of Health for Scotland, said that when the war came to an end some of the very large number of hospitals which the Department of Health had built and had taken over would have to be used for pensioners and some would be absorbed in meeting the shortage of beds which had been notorious in the general hospitals for many years past. With those that remained he hoped something more creative would be done, and he suggested that some part of these beds should be devoted on a regional plan to the care of crippled children. In England there were over forty voluntary orthopaedic hospitals, many of them with a number of clinics served from the centre. In Scotland there was one hospital, the Princess Margaret Rose Hospital, which had developed an orthopaedic system on the English model, and there were one or two municipal hospitals doing orthopaedic work, but in general very little had been done for the crippled child. Four first-class country hospitals were wanted for chronic orthopaedic cases. The hospital by itself, however, was not enough; the early discovery of the cripple, diagnostic facilities, and various kinds of care were also needed.

International Control of Disease

Sir Alexander Russell, who until recently was Public Health Commissioner with the Government of India, lectured at Dundee on February 24 on the international control of disease. He described the setting up of the International Office of Public Health with its headquarters in Paris and the framing of the first International Convention on an international basis. He referred particularly to the new aspect in international control since air traffic began to make it possible for infected persons and insects to be transferred thousands of miles within the incubation period of many of the dangerous infectious diseases. An air convention was adopted in 1934 whereby, in countries where plague, cholera, and small-pox were endemic, passengers leaving by air were required to be in possession of recent
inoculation and vaccination certificates. Under the terms of the convention every country was required to notify particular aerodromes as its ports of entry for air traffic, and these aerodromes had to comply with certain requirements before they could be classed as “sanitary.” Until the fall of France the Paris office held meetings every six months to review the workings of the conventions. Sir Alexander Russell is now in charge of anti-diphtheria measures in Scotland, and he mentioned that during the last six weeks approximately 250,000 persons had been immunized; the number aimed at is 800,000.

**Hospital Beds in Glasgow**

Sir Patrick Dollan, Lord Provost of Glasgow, presiding at the Court of Contributors of the Victoria Infirmary on February 19, suggested that an excessive number of beds had been reserved for air-raid casualties in Glasgow. He urged that the Department of Health should review the matter and take more into consideration the local knowledge of hospital governors and staffs. At the Victoria Infirmary there were 300 beds so reserved, and the average waiting list at this hospital was above 600. He also drew attention to the large number of road accident victims, and suggested that the three city infirmaries—the Royal, the Western, and the Victoria—should combine in an inquiry into the subject, on the assumption that a large number of these casualties might be avoided if the fact that five times more males than females were injured was not taken into account. It was reported that at the Victoria Infirmary there was a deficit on general maintenance account of £17,000. The cost of maintenance, owing to the rise in the price of commodities, showed an increase of nearly £12,500 over that for the previous year.

**Central Midwives Board**

At the last meeting of the Central Midwives Board for Scotland intimation was made of the appointment of the following persons to be members of the Board for a period of five years. The appointing body is named within parentheses.

Mr. Peter Taylor, Mrs. Frances A. W. B. Allan, Miss Mary McGhie, Miss Margaret Wilson Risk, and Miss Margaret Rachel Gouk (Department of Health for Scotland). Dr. Clarice M. M. Shaw (Association of County Councils for Scotland).

David Robertson, M.A., LL.B. (Convention of Royal Burghs). Miss Isabella Cormaty Dewar (Queen’s Institute of District Nursing, Scottish Branch).


Prof. Johnstone and Prof. Hendry were elected chairman and deputy chairman respectively for the ensuing year. Examiners were appointed and institutions were approved for the training of pupil midwives.

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**IRELAND**

**Medical Meetings in Belfast**

A wartime innovation has been introduced in the collaboration of the Ulster Medical Society and the Northern Ireland Branch of the British Medical Association in a series of very successful meetings which are being held in the Whitla Medical Institute, Belfast, every fortnight. Members of the R.A.M.C. are invited, and there has been a large attendance at every meeting to hear papers on varying subjects and to take part in the discussions. The first of the series, under the presidency of Mr. T. S. S. Holmes, was held on November 20, 1940, when Lieut.-Colonel L. B. Cole read a paper entitled "Diabetic Coma in a Series of Young Diabetics." He dealt with the causes of coma and its treatment, and mentioned some measures which might prove effective in its prevention. In a paper entitled "Peripheral Arterial Embolecomy," Major H. Agar recorded the operative details as well as actual cases, and described a technique that could now be tackled surgically with a reasonable hope of recovery.

The meeting on December 4 was preceded by the ceremony of the unveiling of the portrait of the late Sir Robert Johnstone—a gift from Lady Johnstone. Mr. Holmes paid eloquent tribute to Sir Robert's professional attainments, and spoke warmly of his qualities as a man. Dr. Charlotte Warner then read a paper on "The Child, the Community, and the General Practitioner," in which she emphasized the importance of the doctor's taking a more active interest in the child's welfare from the post-natal period to the years of puberty. She also expressed the opinion that advice should be given by a doctor rather than by the child's relatives, and illustrated her contentions by quoting cases with which she had come into contact. Major B. W. Rycroft read a paper on "Some Recent Advances in Ophthalmology" and illustrated it with two films, one on the fitting of contact glasses and the other on corneal grafting. At the next meeting Lieut.-Colonel W. D. Turner, in a paper on "Sciatic Pain," outlined the defects in the different means of diagnosis as well as to a classification of sciatic pain in its different forms. Each condition demanded specific treatment, and Colonel Turner dealt particularly with extradural injection for acute sciatic neuritis and local injection into the fibrositic muscles. Dr. B. R. Clarke read a paper entitled "Case-finding in Pulmonary Tuberculosis," and described the cineradiography method of discovery and illustrated his points with statistics and an excellent series of x-ray photographs showing various lesions. Then followed an animated discussion, in the course of which Mr. R. J. W. Withers spoke of his experience with sciatic scoliosis and showed slides illustrating the value of a plaster jacket. "Three papers on "Non-penetrating Injuries caused by Blast" were contributed by officers of the R.A.M.C. Lieut.-Colonel R. Coyte classified blast injuries into two main categories—blast in air and in water. He divided these again into injuries caused by near, moderately near, and far-distant blast, and quoted cases illustrative of these types. Major W. C. Barbour described two cases of blast in water in which there had been a perforation of the ileum about eighteen inches from the ileocecum, and discussed the mechanisms of the formation of the condition. A paper by Major J. W. Osborne was read by Major H. E. Bonnell in the absence of the former through illness. The physics of blast waves were dealt with, and quotations from Zuckerman's experiments showed the effects of blast on animals at certain distances. Post-mortem findings were related, together with a description of symptoms and treatment, in the cases of intracranial damage. A discussion of the casualty services in Northern Ireland was the subject of an interesting meeting in which Prof. T. Flynn, Dr. F. M. B. Allen, and Dr. F. P. Montgomery were the principal speakers. Prof. Flynn, Chief Casualty Officer for Belfast, described the collection of casualties and the procedure to be followed in the event of a raid, emphasizing the importance of the "Report Centre." An account of the Emergency Medical Service was given by Dr. Allen, Hospital Officer to the Ministry of Public Security, in which he described the position of the various hospitals in Northern Ireland and the facilities for the treatment of wounded in the area of each hospital. He mentioned the mobile services which could be sent to any part of the country, and emphasized his desire to see a store of plasma in every casualty-receiving hospital. Dr. Montgomery spoke of the Royal Victoria Hospital, Belfast, as a casualty-receiving hospital and discussed the various protective measures for the safety of the institution. He also dealt with the problems of staffing and the possibility of the horticulture, gas, and electricity supplies not being available. During the discussion which followed, the D.D.M.S., Brigadier D. T. Richardson, offered his whole-hearted help to the civil authorities in the organization of the casualty services. At the sixth meeting of the series Dr. R. Thompson of Armagh read an instructive paper on the "Depressive Phase of Hysterical-depressive Insanity," quoting Kraepelin's classification of the disorder.
and detailing the several degrees of the melancholia cases. He discussed the symptomatology of each type and described their treatment, emphasis being laid on prevention of suicide and on the necessity for rest in bed. Prof. J. H. Biggart then gave a leading article on "Medicine in a Changing World" and showed a large number of slides of the various changes found in cases of overacting and underacting pituitary. He pointed out that the physiology of these glands was based on animal experimentation and was therefore fallacious, and that further human study was required. Through the courtesy of Colonel W. R. Ward, A.M.S., a meeting was held at the 24th (London) General Hospital, at which a large number of cases of clinical interest were shown.

Correspondence

Medicine in a Changing World

Sir.—The correspondence which has followed the publication of the lecture on "Trends in Nutrition" and your leading article on "Medicine in a Changing World" in the issue of January 18 indicates that at least some of the members of the Association think that the medical profession should make a contribution to planning for post-war reconstruction.

While there may be differences of opinion as to what part medicine should play in planning, there is general agreement that planning is necessary. It is now being realized that this war is the convulsive end of an epoch. When the fighting finishes there will be a new order of some kind. To avoid a breakdown of the economic and social system we must have a plan for the adjustment of the existing system to make possible orderly progress towards the new order. To this end the Government has already set up a new Planning Department, and a number of other influential groups are planning independently.

But what are they planning for? Between the last war and this one there was a great deal of economic planning on both a national and an international scale. The main schemes which came to fruition were those which restricted the production and distribution of commodities which people need. This setting up of barriers between the common people and the great wealth which science has made possible tends to perpetuate economic distress and poverty. This led to discontent and a feeling of frustration which the Dictators exploited to gain the allegiance of the common people, and especially of youth, to whom they promised a new and better economic system.

And now we start planning again. But this time, whatever ideas the planners may have, there is a strong and growing opinion that instead of piecemeal planning for sectional interest there should be comprehensive planning for the welfare of the whole population. In Government planning the first objective should be to provide the necessities of life for all the people governed. Mr. Churchill's reference to the fuller life of the common man, and Mr. Bevin's reference to raising the misery of poverty to the limbo of the past, as the main objective of post-war reconstruction, have given expression to this idea.

Now here is where medicine can make an invaluable contribution both to national and to international planning. It can define the requirements for physiological and psychological well-being, which are essential for a full life. By defining the first objective of planning they will have set it upon the right course.

In your leading article you point out the danger of the profession's being involved in politics. The profession would lose it if allowed to do so. It would therefore be the ground for conflicting political and economic theories. While members of the profession as citizens should be free to hold any political views they think right, the profession as a profession should be apart from, and above, politics. But it should be interested in the promotion of health, and planners should look to it for guidance on the kind of conditions under which the common man would be able to attain his fullest inherited capacity for health and physical fitness. A statement of these conditions based on facts, so far as they can be ascertained, would be a scientific, not a political, statement.

If the B.M.A. would undertake the task of laying down the standards needed for health and set them forth in what you, in your leading article on "Medicine in a Changing World," have called a medical charter, they would have something definite to plan for, and enable them to deal with realities instead of with political and economic theories. As your correspondent Mr. Sayle Creer points out, the needs of man are absolute and unchanging and can be ascertained by investigation, whereas economic and political laws are alterable by man. Once the standards for human needs have been determined, the necessary political and economic adjustments can be made to provide for the needs. A statement of the needs would be a chart to planners. Once they had a clear idea of what was needed to be done they would tend to forget their conflicting theories and collaborate to devise ways and means of getting at the desired objective.

In the present crisis, when people of all shades of political opinion are co-operating in a spirit of goodwill to save freedom and build a better world, the B.M.A. can make an invaluable contribution to human welfare. It has the knowledge and the authority to state the first things that should be done. If the terms of the proposed medical charter were fulfilled—this is; if conditions were such that the whole population could attain physiological well-being—the worst evils of the past would be abolished. We would be well on the way to the new era of plenty. Indeed, we would be more than half-way home.

It is to be hoped that the B.M.A. will rise to the occasion and pronounce a charter which might well be of greater importance for humanity than any of the great historic political charters and declarations.—I am, etc.,

JOHN BOYD ORR.
Aberdeen, Feb. 24.

Effect of Peritoneal Irrigation on Intestinal Activity

Sir,—I have read with pleasure and interest the paper by Mr. D. M. Douglas and Dr. F. C. Mann (February 15, p. 227). The subject of functional paralysis of the intestine was the theme of the Bradshaw Lecture I delivered in 1934, and I chose it in the hope of exciting my colleagues to enter a field of clinical and experimental research from which knowledge that will halve the risk and quarter the suffering that now attend abdominal operations is waiting to be garnered.

The problem is one which requires a welding of clinical and laboratory research, and no theory founded on experimental work can be acceptable unless it accords with and explains the clinical facts. An enormous number of experiments on dogs and other animals have been carried out, many of which to my mind miss the mark. For instance, a loop of gut or its affenter or efferent vessels are ligature, and the investigator seeks to discover why the animal develops certain symptoms and dies. But surely the basic reason is the ligature.

Post-operative functional obstruction may be accompanied by peritoneal irritation, but the accompaniment is not constant, and, vice versa, peritoneal irritation frequently exists without any functional obstruction. The cases that most of all need investigation, and an explanation of which would throw a flood of light on the problem, are those in which functional obstruction occurs after operations not opening the peritoneal cavity, such as prostatectomy and nephrectomy, or sequent to states in which an operation plays no part, such as lobar pneumonia and severe injuries about the hip-joint.

The conclusion I reached in my lecture was that the motor and vasomotor disturbances in the intestine, functional and organic, are caused by an agent generated somewhere in the tissues that the operation, accident, or disease has injured, and that this tissue lies either in the peritoneal cavity or in close proximity to it. Such evidence as is available suggests that its production has some relation to partial circulatory interference in the tissue in which it is produced. Whether the agent, once produced, acts directly by blood or lymph conveyance or indirectly through the splanchnic nerves is not
The Services

MEDICAL DIRECTOR-GENERAL OF THE NAVY
Surgeon Rear-Admiral Sheldon F. Dudley, C.B., O.B.E., F.R.C.P., K.H.P., has been appointed Medical Director-General of the Navy in succession to Surgeon Vice-Admiral Sir Percival T. Nicholls, K.C.B., F.R.C.S., K.H.P., from July 2, 1941.

DIRECTOR-GENERAL OF MEDICAL SERVICES, AIR MINISTRY
Air Vice-Marshal H. E. Whittingham, C.B.E., F.R.C.P., C.M.G., has been appointed Director-General of Medical Services, Air Ministry, in succession to Air Marshal Sir Victor Richardson, K.B.E., C.B., M.B., D.P.H., K.H.S., from March 1, 1941.

CASUALTIES IN THE MEDICAL SERVICES
ROYAL NAVY

Missing, Presumed Killed

Surgeon Lieut. William Boyd was educated at Glasgow University and graduated M.B., Ch.B. in 1932. In the same year he joined the British Medical Association.

Surgeon Lieut. Frank Hanson Williams took the L.M.S.S.A. and L.R.C.P. in 1931, and had been a member of the British Medical Association since 1934.

Probationary Temporary Surgeon Lieut. Harold Fitzgerald Boyd was educated at Queen’s University, where he graduated M.B., B.Ch., B.A.O. in 1937. His home was at Kilmahine, Dublin.

Injured and Wounded
Temporary Surgeon Lieut. Maximillian Raphael Julius Behrendt, R.N.V.R.

Probationary Temporary Surgeon Lieut. Richard George Sarel Whitfield, R.N.V.R.

ROYAL ARMY MEDICAL CORPS

Major John Francis Bourke, M.C., lost his life at sea by enemy action in January. He took the Scottish triple qualification in 1913 and served during the war of 1914-18, being mentioned in dispatches in 1916 and receiving the Military Cross. He attained the rank of major in 1927 and was invalided out towards the end of 1940. He had just served a term of duty in India and was recently stationed at Quetta, and was on his way home when he met his death. He had been a member of the British Medical Association since 1928.

DEATHS IN THE SERVICES

Surgeon Captain Charles James Edward Cock, R.N. (retd) died at Bouth on February 19, aged 88. He received his medical education at Charing Cross Hospital and qualified M.R.C.S., L.R.C.P. in 1894. Entering the Royal Navy soon afterwards, he became surgeon captain in 1909 and retired with an honorary step in rank as surgeon captain in 1923. He served during the war of 1914-18, receiving the medals, and the President of the Czecho-Slovak Republic conferred upon him the Croix de Guerre in recognition of services rendered during the war.

Colonel Eustace Augustus Burnside, late R.A.M.C., died at Paisley on February 17, aged 80. He was born at Nassau, in the Bahamas, on September 24, 1860, the eldest son of the late Sir Bruce Burnside, who was educated at King’s College, London, and took the M.R.C.S. and L.S.A. in 1886. Entering the Army as surgeon in 1887, he became lieutenant-colonel in 1911, colonel in 1915, and retired in 1919. He served on the North-West Frontier of India in the Izzatul campaign of 1892; in West Africa in the Lagos campaign of 1897-8, when he was mentioned in dispatches and received the African medal with a clasp; in operations in Sierra Leone in 1898-9 (clasp); in the South African War of 1899-1902, in operations in the Transvaal, in the Orange River Colony, and in Cape Colony (Queen’s medal with three clasps and King’s medal with two clasps); and in the events of 1914-18, when he received the Portuguese Order of Avis as commander. He had been a member of the British Medical Association for thirty-four years.

Lieut.-Colonel Reginald Johnson, M.B.E., R.A.M.C., died on February 4, aged 52. He was born on September 12, 1888, and was educated at Trinity College, Dublin, where he graduated M.B., B.Ch., B.A.O. in 1912, proceeding M.D. in 1914. He entered the R.A.M.C. as a temporary lieutenant in 1916, as a permanent for a term of 12 years, and was promoted to lieutenant-colonel in 1928 and had recently been promoted to lieutenant-colonel. He had lately been stationed at Quetta.

Universities and Colleges

UNIVERSITY OF OXFORD

The following medical degrees were conferred on March 1:

UNIVERSITY OF CAMBRIDGE

The Rockefeller Foundation has agreed to continue until the end of 1941 its grant of £1,200 a year for research in cellular physiology at the Moltzino Institute under the direction of Prof. Keilin.

In Congregation on March 1 the Senate resolved to confer the degree of Master of Arts upon Leicester Hammond Atiken, M.B., B.Ch.N.Z., F.R.C.S.Ed., university demonstrator in anatomy.

The following medical degrees were conferred on March 1:

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

Entrance Scholarships and Exhibitions

Two Goldsmid Entrance Scholarships, entitling the holder to the final course of medical study, are offered for competition in July and are open to students who are preparing for the degrees of the universities of London, Oxford, Cambridge, or other British universities, or for the diplomas of the Medical Colleges in the United States and Canada. There is also a Goldsmid Entrance Exhibition, entitling the holder to a reduction by £20 of the fees due for the full course of final medical study, and the Lister Entrance Scholarship in Pathology, entitling the holder to a reduction by £52 10s. of the fees due for the full course of final medical study. Entries must reach the Secretary, University College Hospital Medical School, University Street, W.C.1, by July 5, and applications for further particulars should be made to the same address.

UNIVERSITY OF ABERDEEN

On February 26 the Senate agreed to confer the honorary degrees of LL.D. on J. E. Arthur, Royalties Falconer, C.B.E., D.S.O., M.D., F.R.C.P., Principal and Vice-Chancellor of the University of Capetown.

UNIVERSITY OF EDINBURGH

At a meeting of the University Court on February 24 Prof. A. Patrick and Prof. J. Hendry were appointed external examiners in systematic medicine and systematic midwifery and gynaecology respectively.

Prof. J. R. Learmonth was appointed a member of the Lister Memorial Committee of the Royal College of Surgeons of England for the award of the Lister Memorial Prize and Medal for 1942.

ROYAL COLLEGE OF OBSTRICIANS AND GYNAECOLOGISTS

The following have been elected to the Fellowship of the College:

William Cunningham Armstrong (Glasgow), Norman Llewellyn Edwards (Derby), Alexander Livington Gunn (London), Joan Kennedy Rose (Edinburgh), Wentworth Alexander Taylor (Birmingham), Robert Watson (Northampton).