The Glasgow Naturalist (2024) Volume 28, Supplement, 87-98 https://doi.org/10.37208/tgn28S02

University of Glasgow Department of Zoology 1923-1973

Edited by J.R. Downie

Graham Kerr Building, University of Glasgow, Glasgow G12 8QQ

E-mail: roger.downie@glasgow.ac.uk

ABSTRACT

The Editorial Introduction describes the origin of this set of short articles on the first 50 years of the Zoology Building. A celebration of the first five decades was held in 1973, and the Regius Professor, David Newth, facilitated the writing of a commemorative pamphlet including articles by departmental members, past and present. The articles, not published formally before, are reprinted here followed by an explanatory Appendix compiled by the editor. Following a short news item from *The Glasgow Herald* (1921) announcing the new building, there are four articles. The first, by Agnes "Nora" Miller, lecturer 1924-1963, gives her reminiscences over four decades. The second, by Sir Maurice Yonge, Regius Professor 1944-1964, focuses on the teaching, research and changes to the building during his time at Glasgow. The third, by David Newth, Regius Professor at the time of the 50 years celebration, covers the changes during his time of rapid development in the place of Zoology in higher education. The final article, by the editor, concentrates on student activities, such as the Zoological Society.

EDITORIAL INTRODUCTION

In 1973, Regius Professor David Newth realised that it would be opportune to celebrate the Zoology building's first 50 years. As a contribution to the celebratory events, he asked me, as a recently appointed lecturer (1970) and also a graduate of the Department's degree in zoology, to assemble a pamphlet recounting the Department's history, and he arranged for funding from the University Court to cover the printing costs. He also arranged for short memoirs to be written by past members of the Department: Agnes Miller (Lecturer 1924-1963; died 1994); and the previous Regius Professor, Sir Maurice Yonge (Professor 1944-1964; died 1986); he wrote his own account of recent developments (Newth was Regius Professor 1965-1981; died 1988). In addition, I contributed an account of student life in the department, incorporating some reminiscences from before World War 1, written by Sister Monica Taylor (1877-1968; D.Sc. 1917; Head of Biology at Notre Dame College, Bearsden, Glasgow until 1946).

The pamphlet included lists of staff and students over the period 1924-1973. We have not included these here. The data on student numbers, along with those from 1973-2023 have been used in the next section, *The Flourishing of Glasgow Zoology*, to demonstrate how the impact of zoology had grown. We reprint the 50th anniversary articles here, as they were written, with the addition of an Appendix of notes to amplify the information provided (referred to by superscripts in the text). We also include some of the photographs from the pamphlet plus a few other illustrations that seem appropriate. We have not given the contact details for the authors since all are deceased, except the editor whose details are on the first page of this section. The section on members of the Department, alluding to the possibility of mistakes in the lists, included the sentence: "the editors of the centenary edition will doubtless be happy if you let us know of our blunders now". I certainly did not expect, in 1973, that I would be the editor of the centenary edition, but repeat the invitation to inform us of errors you spot, or extra information we could add, in the event of a future edition!

I noted in 1973 that "the department appears to have been a happy, companionable, even romantic place" given the number of marriages that have occurred between fellow students and even between staff and students. The long hours spent in laboratories and on residential field courses, and the fairly equal numbers of male and female students probably contributed to this process. I think it is fair to say that the air of conviviality, allied to hard work, continues to the present day.

Authors' names at the start of the following articles are formatted as in the original publication.

GLASGOW UNIVERSITY: NEW NATURAL HISTORY BUILDINGS

From *The Glasgow Herald*, Saturday, 25th June, 1921

Glasgow University is soon to be provided with a building to "house" its Natural History department, particularly that branch of it dealing with zoology, worthy of the reputation which has been achieved in this realm of scientific research by those who have been associated with Gilmorehill. The provision is somewhat belated, as will be appreciated by anyone who has seen the present suite of apartments devoted to this important aspect of education: cramped rooms, some of them situated in the basement of the University, and most of them badly ventilated and lighted, lacking the essentials of up-to-date equipment for research work, and without the convenience which concentration and direct communication give. While the great scientific

departments in the Faculty of Medicine have within recent years been furnished with modern laboratories, zoology alone has remained in its somewhat antiquated accommodation in the north-east corner of the main building. It has no rooms built specially for laboratory purposes: it comprises a series of small rooms part of which formed the dwelling-house of the under-keeper of the museum. Yet it was in these rooms, badly lighted and insanitary, that much of the splendid work by Professor Agar upon heredity and by Miss Muriel Robertson on protozoology (to cite two examples which readily occur to the mind) was carried out. "Extreme difficulty" is a mild description of the conditions: indeed, the one fairly good room in the department, that which is used for the elementary class, is really a part of the museum which has been lent for the zoology work. The need for greatly improved accommodation has long been recognised, and practical steps would have been taken some years ago to provide it but for the intervention of the war, and the plan now about to be commenced will not only meet that recognition, but it will free a considerable portion of the north wing of the museum for general University purposes. The entire building scheme contemplated is much more extensive than the provision of new quarters for the zoology department, as it involves the erection of additional accommodation for the Faculty of Arts and the memorial chapel at the west quadrangle, but these sections of the scheme are meantime in abeyance.

EARLY DAYS IN THE DEPARTMENT

Agnes E. Miller

Though my acquaintance with the Department of Zoology did not take place until the winter session of 1917, there is on record a description of the building, its location and condition from the pen of Sir John Graham Kerr[1]. Writing in 1902, he states that "passing through Glasgow... I took the opportunity of making a reconnaissance of my future department. There was, of course, no zoological laboratory. The eastern half of the lower hall of the Hunterian Museum, known in later years as the Hunter Hall, had been used for what little practical work had been done, but it had no scientific equipment. Its floor was littered with geological debris; its entry was made by wooden steps through one of the windows." Incidentally this window may still be recognised as different in pattern from all the others on that north side of the East Quadrangle.

When I arrived to take the course in Zoology it was obvious that with the passage of time certain improvements had been made since that description of 1902. The large elementary laboratory was fitted with long wooden tables, with adequate if sometimes old-fashioned microscopes and individual electric lamps made to Professor Kerr's specification by Messrs Pye of Cambridge. Apart from the large laboratory the only room on the same plane was a passageway to the door of the lecture theatre, to a narrow stair leading up to an entresol which was the Professor's room and to another door opening on to an iron spiral stair to the basement. Down there were the research rooms, the windows of most of which were well below the level of the quadrangle so that only limited daylight penetrated; the other rooms had no windows at all.

Situated above the elementary laboratory and not very easy of access for the ordinary student was the zoological part of the Hunterian Museum. Here Professor Kerr had been at work re-organizing and re-arranging those specimens more useful for teaching. Again, it was lack of space that hindered their adequate display. It was, however, the necessity of preserving the various valuable Hunterian collections that seemed to rouse the University Court of that day to the growing importance of the subject. Space was not the only thing lacking, for the University Court had no available funds to finance such necessary improvements. However, the Bellahouston Trustees[2] agreed to supply a sum of money for the purpose, on condition that the Court provided a similar sum.

The active growth and development of the Museum coupled with a great increase in the number of students made more and more urgent the problem of accommodation for the Zoology Department as a whole. Accordingly, in September 1912, Professor Kerr had an interview with the University Court who regarded the situation with sympathy and discussions took place with the eminent architect, Sir John J. Burnet[3]. It was agreed that an entirely new building adapted to the needs of teaching and research should be provided and a site was chosen. The new Zoology building was to occupy the south side of a new quadrangle with the already existing Natural Philosophy building on its eastern side and the contemplated Chemistry building along the northern side.

The concentration of accommodation for research and practical classes along the north front ensured the steady northern light essential for microscopic work and dissection. A further precaution to supply adequate lighting for the elementary class was taken when the windows were carried right up through the full height of the building. Then came World War I when matters were delayed, but in July 1919 a beginning was made. There had been a suggestion that Sir Ray Lankester[4] might lay the foundation stone but by this time he was too infirm to undertake the journey. As the building took shape and its handsome proportions became recognizable there were those who wondered that so fine an edifice should have been erected for mere zoological requirements! In a conversation with Professor Graham Kerr on the design of the building, he said that his idea had been to have a two-storied factory type structure to which additional floors might be added as required for future developments. However, certain members of the University Court of earlier days who had strenuously opposed a new Department for Zoology, now declared that a worthy building must be provided.

In June 1923 the new building appeared to be almost complete and preparations were got in train to transfer fittings and equipment from the old Department.

However, on the day before the first lecture of the new term Professor Kerr looked into the lecture theatre and found NO BENCHES! Nevertheless, the lecture was delivered next morning with the students all sitting on the floor and all ready for fun. The lecture ended five minutes before time: the Professor then wrote a telephone number on the blackboard, and then made some remarks about contractors whom no one seemed to appreciate as they imagined they should be, but anyone with access to a phone might assure them that some were very much interested in their efforts. History records that the students played up and the contractors' phones rang from morning till night for an entire week.

The Museum was perhaps the most imposing part of the new building. It was indeed a great architectural success both as regards suitability for its purpose and its artistic beauty. It made a wonderful setting for the Rectorial luncheon on the 12th of December of that year when Lord Birkenhead[5] delivered his famous speech which was to upset many of the idealists gathered there and many others elsewhere. The style of building was so different from all those surrounding it that it appealed to many visiting the University (Fig. 1). Indeed, one professor in the Faculty of Arts brought regular parties of viewers to admire it: when, however, additions were made which spoiled the original symmetry these professorial tours ceased.

Any account of former days in the old Department would be incomplete were there no mention of two worthies who seemed woven into its fabric: Brannigan, the more conspicuous and Jamieson who was seldom seen (Fig. 2). The tall thin figure of Brannigan - he was an ex-Life Guardsman - was a familiar sight to all the first-year students as he brought in a glass of water a few minutes before the Professor entered to give the lecture. This was the occasion for quips and jests of all kinds but more often there was such hearty good-going singing that any other utterance was drowned in the chorus.

Brannigan combined many duties; for one thing all the work of preparation for the large practical class was carried through by him assisted by one boy only and since there was no other place, this was done in a corner of the elementary laboratory. Many of the specimens which had to be stored were here on shelves and when examination time drew near, parties of anxious students begged Brannigan to demonstrate those particular exhibits on which they might be questioned.

Fig. 1. The Graham Kerr (Zoology) Building. (A) Front. (B) North side. (C) Stairwell. (D) Empty museum. (Photos: T. & R. Annan and Sons for the University of Glasgow)

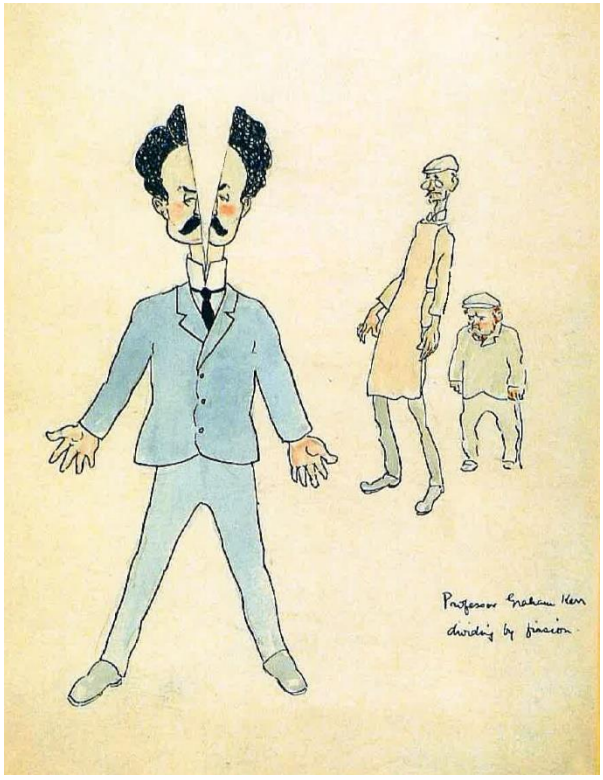

Fig. 2. Cartoon of Professor Graham Kerr "dividing by fission" with his two technicians, the tall Brannigan and short Jamieson. Drawn by Osborne Henry Mavor, better known as James Bridie, the playwright and founder of the Citizens Theatre. Mavor graduated in medicine in 1913, so would have been taught by JGK. He contributed caricatures of academic staff to the Glasgow University Magazine 1906-1913.

He also kept a firm check on the register of attendance both for lectures and practical class, which he sometimes, lapsing into army jargon, referred to as the "crime sheet!" His chief function became that of guarding the Professor from unsuitable callers and at this he was adept. He even watched those acquaintances who might waste too much professorial time and with his Irish charm he would adroitly speed them away.

Now Jamieson was the opposite of Brannigan in almost every way. He was, due to some accident in early life, very bent and small and cared not at all about his appearance. He was a well-read man and could argue with knowledge on many subjects but above all he was the most highly skilled section-cutter of his time. In his early days he had been employed in various laboratories in Edinburgh University and spoke of his work for Professor Rutherford[6] of Physiology, though it was in the department of Professor Cossar Ewart[7] that he met Graham Kerr, then a medical student. When Professor Kerr came to Glasgow, he had much *Lepidosiren* material to work up, so he began to look for Jamieson who seemed to have disappeared. Ultimately, he was located and set to work. The University Court did not agree to pay this technician, so the Professor paid him four pounds a week for about ten years or so until Professor Bryce took up the matter. It was no secret that shortly after he had produced some beautiful work a very distinguished member of the medical faculty offered Jamieson three times that amount if he would go and work for him. However, Jamieson, who did not have a gentle tongue, gave what some would call a "dusty" answer.

These two personalities never agreed: Jamieson teased Brannigan whom he considered inferior in intellect and Brannigan could not always conceal his contempt for Jamieson's slovenly ways. The one bond that held them was their complete loyalty to their chief. The move to the new Department affected these two more than any of the others. Brannigan, immured in an office albeit fitted with glass all round, no longer could visit the specimens with the students and the large airy room in which Jamieson was now placed was too bright and clean compared with the dingy, homely corner he had left.

Many were the personalities who passed through Zoology in the old Department and who attained fame all over the world. It might be interesting to mention one, a medical student, who was called to become Chancellor of his old University and whose name is fittingly remembered in the new large Boyd Orr[8] building.

1944-1964

Sir Maurice Yonge, F.R.S. (Fig. 3)

Fig. 3. Sir Maurice Yonge. (Photo: Department of Zoology Archives/University of Glasgow)

I have been asked to provide some record of the Department during the 20 years, from October 1944 to December 1964, while it was under my charge. I am uncertain about dates, but the sequence of events is probably roughly correct.

The war was nearing its end when I arrived, but conditions could hardly have been more depressing. The staff consisted of Charles Parsons[9] who had been in charge since my predecessor[10] left the previous January and no one could have wished for a better senior colleague, Otto Lowenstein[11] later to go as Professor to Birmingham, Dr. Margaret Jepps[12] a distinguished protozoologist whose health compelled retirement after a few years, and Nora Miller[13] still very much with us. Later Anthony Downes[14], lecturer in Entomology who later went to Canada, J.D. Robertson[15], now occupying a personal chair, and Harry Slack[16], now recently retired from his labours in Loch Lomond, returned from national service. I had made one condition when I came, namely that Hugh Steedman[17] should follow me to Glasgow which he did in 1945. He had been my right hand at Bristol and so was to be in Glasgow where staff and research students gained immeasurably from his unique wealth of technical knowledge.

I had come from a new building, actually completed after the outbreak of war, with sizeable advanced classes; in Glasgow I found a building designed as though the needs of 1923 were those of eternity and with only two students beyond first year, namely L.H. Finlayson[18] and W. Russell-Hunter[19], the one now in a chair at Birmingham and the other at Syracuse, N.Y. So at least the quality could hardly have been better. I was to struggle with the building for the next 20 years, few of them passing without some operation involving subdivisions of rooms, breaking through massive walls or opening up new areas in the extensive but initially almost unusable basement.

The first necessity in teaching was to extend the honours course from 3 to 4 years and hope to attract students into the advanced years although these never exceeded the numbers reached in Bristol before the war. Matters are very different now. A great deal depended on the first-year teaching and I continued to give the introductory lectures until a few years before I resigned the chair.

The first development was the building of the extension for agricultural zoology. This was, I think, the first building erected by the University after the war and its connection with the main building involved cutting through something like three feet of solid masonry. It did have the added advantage of opening up the blind end of the basement letting in air and some light and permitting its gradual utilisation. Alec Hill who was responsible for teaching in agricultural zoology with his colleagues, first Alistair Fraser, and later Ronald Dobson and Douglas Cochrane, was able year after year to attract excellent students into the honours course[20].

Loch Lomond came early into the picture. Harry Slack was anxious to develop freshwater biology, while money came from governmental and private sources for a programme of research into midges (*Culicoides*), this under the general direction of Douglas Kettle, not a member of staff but a very welcome guest, with assistants including Bill Lawson who remained to succeed Downes. Accommodation for both activities was provided in two large ex-army wooden huts erected, by the generosity of Sir Iain Colquhoun, on his property at Luss[21]. A converted lifeboat was bought at Balloch, later replaced by a motor-boat purchased at Leith, and brought across through the Forth-Clyde canal and up the Leven.

About this time the U.G.C. offered the University a lectureship in taxonomy which led to the appointment of Roy Crowson[22]. When the Veterinary College was taken over this involved the transfer to the department of Adrian Hopkins[23] who was to teach parasitology and do research in experimental helminthology. This led in 1963 to a grant from the Wellcome Trustees for the erection of a laboratory for Experimental Parasitology at Garscube (Fig. 4).

Fig. 4. The Wellcome Laboratories for Experimental Parasitology, Garscube (Photo: Department of Zoology Archives/University of Glasgow)

To turn to personal concerns, I spent the greater part of 1949 as Visiting Professor at Berkeley, California; I did not accept the offer to remain permanently but did have a most invigorating period of molluscan research at Pacific Grove during the summer. This visit resulted in the later exchange between Ralph Smith of Berkeley and Bob Clark[24] then an Assistant, later to go to Bristol and now Professor at Newcastle. Arthur Clarke[25] a fellow Assistant is now Assistant Keeper of Natural History at the Royal Scottish Museum.

Charles Parsons ran the Department in my absence and it must have been in the following year that, with tragic suddenness, he died, a major loss to everyone. He was succeeded as Senior Lecturer by Otto Lowenstein and as Lecturer in charge of Medical Students by the appointment of Anthony Barnett[26] whose ethological activities, later assisted by provision of facilities in the basement, were to continue until he moved to the Chair of Zoology at Canberra.

The field of insect ecology was graced by Mike Brian[27], a person of notable silences but great research acuity who left to take charge of the Nature Conservancy research station at Furzebrook. With interest moved from ants to aphids, research in this field was later developed by Tony Dixon[28], again with provision of special facilities in the basement.

Otto Lowenstein, pupil of Von Frisch, had been engaged in the study of behaviour and of neuro-physiology before I arrived. After his departure this was continued by Graham Hoyle[29], a stimulating if not always easy colleague, who was to move as Professor to Eugene, Oregon. He was succeeded by his junior colleague, Peter Usherwood[30]. With the erection of the new buildings for parasitology, the block containing the animal houses became vacant and was reconstructed internally to provide a surprising amount of accommodation for Peter's activities which here continued to flourish until their recent move into the main building.

The elementary laboratory as built and still existing in 1944 could have been claimed as the most magnificent in Great Britain, perhaps in Europe. It had an impressive floor area and rose the full height of the building seeking additional light (dubiously obtainable in a Glasgow autumn or winter) by way of extensive north-facing skylights. The greatest internal alteration during my tenure was the conversion of this single room by horizontal and vertical divisions into, on the ground floor, a somewhat smaller elementary laboratory, a small lecture theatre and a preparation room (neither present in the original building); on the first floor two advanced laboratories, a research laboratory, a further preparation room and a balance room. The one-time tank room that had housed *Lepidosiren* had already been converted into an experimental laboratory where J.D. (Robertson) taught, while the small advanced laboratory was converted into three staff rooms. Teaching could now be removed from the floor of the Museum, and the inevitable process of peripheral subdivision of this impressively pillared hall began during my tenure to be later, I believe, much extended.

Harry Slack's activities on Loch Lomond led to requests for a permanent laboratory on what is probably the best site for research in fresh-water biology in Scotland. Eventually the University agreed and after much helpful discussion with Stirling C.C. planning authorities a mutually acceptable building was erected south of Rowardennan (Fig. 5). It was officially opened the year after I left so that only its inception and erection are my concern.

My personal interests are marine and molluscan. From 1944 to 1967 I was Chairman of the Executive Committee and then President of the Scottish Marine Biological Association and intimately concerned with the Millport Laboratory. Although conveniently placed for Glasgow, and all marine activities of the Department took place there during my time, Millport[31] was a most unsuitable site for a research institute and my major concern over these years was to move the laboratory, in the event to its admirable position at Dunstaffnage.

Gareth Owen[32], Russell Hunter, John Allen[33] and Alan Ansell[34] (I could add Dan Quayle from Nanaimo, B.C.) were all concerned with molluscan research and with Millport. Gareth came with a grant from the Development Commission to assist me and later became a most valued member of staff, now Professor at Belfast.

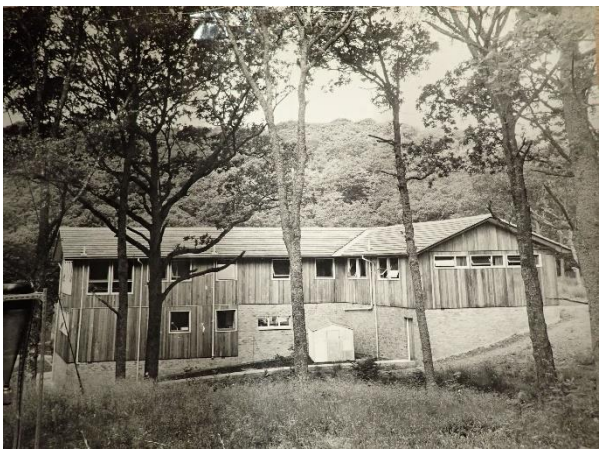

Fig. 5. The Zoology Field Station, Rowardennan, Loch Lomond. (Photo: Department of Zoology Archives/University of Glasgow)

I would go to him with a bright idea and he would soon be back with a brighter one. My personal research owed much to him and to Hugh Steedman. All the four mentioned above were to receive John Murray Travelling Scholarships[35] from the Royal Society and to visit New Zealand, the United States, Jamaica and elsewhere. But I think all the lecturers went overseas for research experience, while my membership of the then Colonial Fisheries Advisory Committee led to Harry Slack spending a year at Malacca and Hugh Elder[36] a longer period at Jinja in Uganda. Amongst my final activities was the installation of the A.E.I. E.M.6 [transmission electron microscope] in rooms especially constructed out of a former store in the basement. Preliminary enquiries were made by Hugh and Gareth who both attended a course on electron microscopy in Sweden. Indeed the facilities as I left them at the end of 1964 (and reported anonymously in *Nature* 205, 745-747) did then seem to represent all that could have been done in the period. It amazes me how much more has been achieved during the eight years since I resigned.

I had a further year away as Visiting Professor at the University of Washington, Seattle, and then at Pacific Grove in 1959/60 but returned to become Dean of Science, a position I had held at Bristol for 4 years. Research effectively ceased. I took the first term of 1964 off to visit Tom Goreau[37] (with whom I was to work closely until his death in 1970) in Jamaica and to lecture in the United States. I had hoped this would restore academic interests but, after 30 years, I had had enough and, with the deeply appreciated help of the Principal was able to resign and assume the welcome status of Research Fellow on January 1st 1965. A few days later I left to join the Stanford University research vessel *Te Vega* at Singapore.

I have recorded my particular indebtedness to certain colleagues: I would like to add Mary McDill, most admirable of secretaries who corrected so many of my errors and repetitions; Alec McKinnon, chief technician, and Jan Campbell for ten years, five before resignation, an invaluable, and still much missed, research assistant[38].

FROM 1965 TO 1973 AND BEYOND

D.R. Newth[39] (Fig. 6)

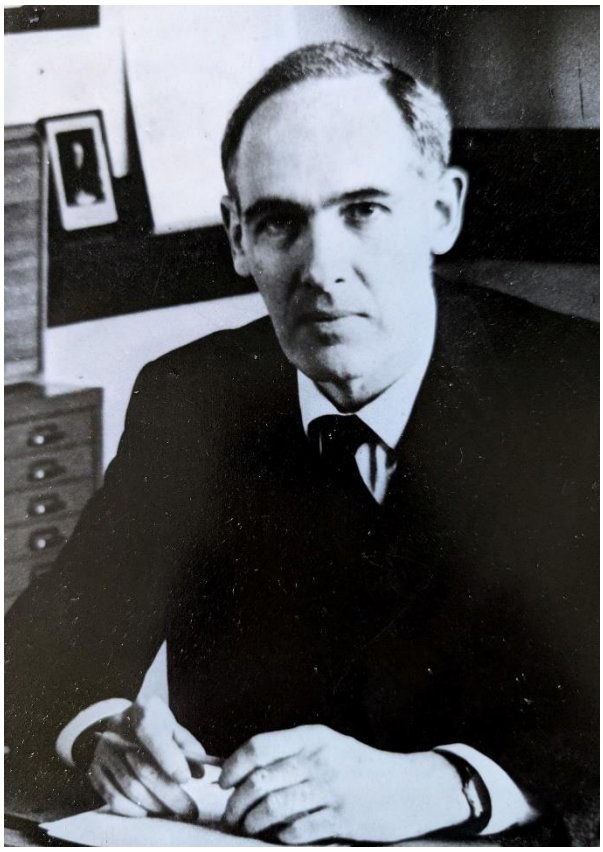

Fig. 6. Professor David R. Newth. (Photo: From the personal collection of Pat Monaghan)

In 1965 the department was, in many ways, well placed to meet the challenge that the sixties brought to established biological departments. Its size and width of interests made a broad curriculum possible for undergraduates, and the heavy commitment to medical, veterinary and agricultural teaching meant that the social relevance of biology was part of its everyday business. The new field station provided excellent opportunities for work in limnology and the parasitologists were housed in new laboratories, though at the expense of a three-mile separation from Gilmorehill. The chief problems of the department were to exploit its academic advantages in the interests of more than a handful of advanced students, and to find answers to the difficulties of teaching an ever more crowded curriculum in an ever more crowded building.

Since 1965, each year has brought major changes in teaching, in research, or in physical amenity, and in each case the change has been associated with growth. In research two groups of importance arose: in electrophysiology around P.N.R. Usherwood, and in aphid biology around A.F.G. Dixon. The Nuffield Foundation made the resurrection of one of the department's old strengths possible by supporting a group in experimental protozoology under K. Vickerman[40]. The Science Research Council, the Agriculture Research Council and the Leverhulme Trust sponsored a group in developmental biology under D.A. Ede[41]. Mention should also be made of the collaboration with the department of education in work for the Nuffield Foundation Inter-University Biology Teaching Project[42].

In teaching, one of the main changes has been the introduction of the biology course for first year science students which replaces the old botany and zoology courses, and the move of this class, and all first year teaching, to the Boyd Orr building. This has meant some modification of second year teaching, but the major innovation has been in the third year which is now largely devoted to optional courses. This has allowed an element of student choice, has kept classes to a smaller size, and has allowed more time for teaching in particular fields, but at the expense of producing graduates who have not studied the whole of zoology to an equally advanced level.

If there is a philosophy behind these developments it is that modern science often demands group research and teaching, but that the fragmentation of large biological departments into small ones is a mistake. In the first place there will be individuals whose work does not call for team organisation, and only a larger general academic unit can happily support them. In the second place, freedom of movement for individuals should be made easy so that an early undergraduate enthusiasm for physiology can easily give way to a later enthusiasm for parasitology, which may change again to a graduate enthusiasm for ecology. In a large general department such transitions are not difficult to make. Finally, one must hope, though against the evidence in many cases, that our specialists learn from each other, whether at research colloquia or at coffee.

The last eight years have seen a striking growth in student numbers - the higher ordinary and honours classes have quadrupled in size and graduate student numbers have doubled. To accommodate them and to improve the laboratories, a continuing programme of additions and conversions in the building has been undertaken. The major changes have involved the construction of a laboratory floor on the roof of the museum (Fig. 7), the conversion of part of the museum to research and teaching rooms, the construction of a small experimental animal house, and the upgrading of old junior teaching laboratories for senior classes. If Graham Kerr could return after 50 years he would see little but the main lecture theatre that he could easily recognise.

Without these changes the department would have been unable to meet its commitments, but even with them some of its units (developmental biology and programmed learning) have had to be exiled to other buildings (Fig. 8).

There are, of course, also personal matters to report. Maurice Yonge stayed in the department from 1965 to 1970 as a research fellow and then withdrew to Edinburgh. His knighthood, conferred in 1967, gave

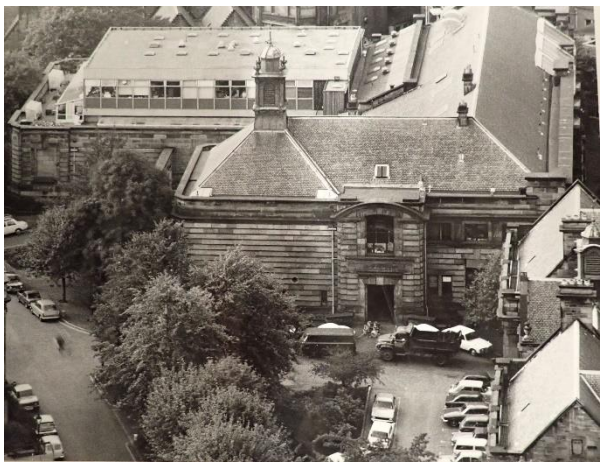

Fig. 7. The Zoology Building from above, showing the original roof laboratories. (Photo: Department of Zoology Archives/University of Glasgow)

Fig. 8. The Developmental Biology Building, Horselethill. (Photo: Department of Zoology Archives/University of Glasgow)

pleasure to all who had worked with him. S.A. Barnett moved to the chair in the Australian National University in Canberra after twenty years during which he had contributed much to several of the department's activities. H.D. Slack, having nursed the new field station through its infancy, retired, but to a place from which he could continue to keep an eye on it. Promotions to Senior Lecturer have overtaken R.A. Crowson, A.F.G. Dixon and P.N.R. Usherwood, while C.A. Hopkins lost his amateur status on appointment to a titular professorship.

The department has been fortunate in its collaborators in this period. The botanists, who share responsibility for first year classes with it, now also join us in teaching a second year course in Applied Biology. The geneticists and the immunologists are teaching honours students in zoology. The Beatson Institute provides teaching in some honours courses. Our warm relations with the Scottish Marine Biological Association have survived their move to Dunstaffnage, while the department is glad to have the services, as honorary lecturers, of the academic staff of the University Marine Station at Millport.

The department can look forward to the next fifty years with some confidence. The policy of concentrating upon a few major areas for research and teaching, while not excluding work in others, is only practicable for a large school. It must necessarily be the pattern of choice for university organisation in biology, and it means that further growth of the department is to be welcomed.

STUDENT LIFE IN THE DEPARTMENT

J.R. Downie

In the early days, the number of students was much smaller than today. The first record of a student society pre-dates both the new building and even the separate existence of a Department of Zoology. It having been determined early in 1892 "that it was advisable a Natural History Society should be formed in the University," a meeting was held on 23rd March of that year to draw up that first necessity of all societies, a constitution. The Society existed to promote "the study of Natural History by organising field excursions and demonstrations." From the first, the demonstrations were successful, and the excursions less so; and even in those far-off days, the weather was to blame. These were days of unity in the biological sciences. A single demonstration included rocks and an astonishing array of bits of animals - whale skin, walrus ivory, a whale earbone, and sections of the eye of a snail, the jaw of a rat, a kitten and a mole. The Natural History Society enjoyed a brief life, and a few years later, Graham Kerr became Regius Professor of a separate Department of Zoology.

We owe to Sister Monica Taylor, for many years head of biology at Notre Dame College, a reminiscence of a zoology student's life in the old building, before the First World War. Graham Kerr gave most of the lectures himself at 9 a.m. (a tradition surviving in the present time-table) in a course dominated by evolutionary morphology. Students were then left to fend for themselves with a mass of material from the Hunterian Museum. Women students at that time were generally taught separately, in Queen Margaret College[43] (now headquarters in Glasgow, of the BBC), but not in Zoology, where men and women were together because of the problems of moving practical material.

Despite the building, a dark Gothic barn of a place, there was a great family spirit in the small department. Staff and students had tea together in Graham Kerr's rooms, and there was considerable excitement as staff members were often fitting out and setting off on expeditions to exotic lands. The high point of each year was Graham Kerr's kaleidoscopic lecture on his Grand Chaco experiences[44], which apparently held all listeners spellbound for as long as three hours. A partisan rather than objective atmosphere pervaded the Department. Students were plunged in gloom when Ross Harrison published a decisive refutation of Graham Kerr's views on nerve fibres; and roused to jubilation when Kerr emerged from his study to argue (wrongly as it turned out) that Harrison's work in fact reinforced his theory[45]. Graham Kerr encouraged the founding of a small zoological society and gave the inaugural lecture

himself. The Society lapsed during the War, but re-appeared in 1923, with the transfer to the new building. Records of the Zoological Society exist from 1926. Membership was in the 40's or 50's, the majority being medical students, and from the earliest days, meetings, about six per session, concentrated on the social relevance of biology. Joint meetings with Botanists and Geologists were commoner than now, as were undergraduate papers (half of the total in some years). It is sad that today's crowded curriculum allows students less time to prepare their own original papers.

Meetings that catch the eye include a joint debate with the Botanists against the Physicists in 1933: "That scientific progress in the future will be biological rather than physical ". Biology won: a Brains Trust in 1942, aping the popular war-time BBC radio programme; and a prototype of University Challenge, on biological subjects, arranged by Dr. Lowenstein, also in 1942.

An annual highlight was the Scottish Universities Biological Conference, the first reference being to a meeting in St. Andrews in February 1927, chaired by D'Arcy Thompson. At first, these attracted small numbers of students to demonstrations and lectures by academic staff; but over the years, staff participation waned, most presentations were by students, and the social element increased. Numbers of Scottish biology students were so small during the Second World War that when the conference met again in St. Andrews in 1944, all the visiting delegates were able to stay at D'Arcy Thompson's home.

After the War, an innovation was the Scottish Universities Touring Speaker: two eminent biologists were invited annually to lecture to all four of the old Universities. The event attracted Alister Hardy, Maynard Smith, Sir Peter Medawar[46] and many others. More recently, with the expansion in numbers of Scottish Universities, and drifting apart of the various biological sciences, this event became a burden to everyone and was abandoned in 1969.

The Zoological Society has always been a focus for social activity in the Department, not always with success. A constant complaint of secretaries was the failure to attract medical and elementary students to Society events. The failure of one dance was blamed on the deadly combination of a Wednesday night, and Queen Margaret Union. The social aspect boomed in the middle 60s with a rise in membership from a usual 100-200, to the astonishing 493 of 1967-68, when the Zoological Society was almost the largest in the University. Meetings were weekly. not fortnightly, and dances, debates and sporting outings were all successful. Membership has declined since, with the departure of all elementary classes to the Boyd Orr Building, but the Society continues to be a strong centre of social activity in the department[47].

APPENDIX

Superscripts in the text refer to the numbered notes below. In some cases, notes refer to other articles in this volume. Where these refer to JGK's memoir, *A Gallery of Memories*, the note simply reads "See *Gallery*". Where the reference is to the article *The Flourishing of Glasgow Zoology*, the note is "See *Flourishing*". Where the text mentions something or someone more than once, the superscript is not repeated. Sources of information in the notes include the online encyclopaedia Wikipedia, and obituary or perspective articles.

1. See *Gallery*. JGK wrote more on this in his memoir.
2. See *Gallery*, note 92.
3. See *Gallery*, note 94.
4. See *Gallery*, note 29.
5. See *Gallery*, note 96.
6. See *Gallery*, note 10.
7. See *Gallery*, note 14.
8. Lord John Boyd Orr (1880-1971); Ayrshire-born University of Glasgow biologist (1910) and medical graduate (1912). Distinguished career in nutritional research and action, becoming Director-General of the United Nations Food and Agriculture Organisation after World War 2. Awarded Nobel Peace Prize 1949; later ennobled. Served as both Rector and Chancellor of the University of Glasgow (the editor recalls being "capped" by him at graduation in 1967).
9. Charles Parsons (1901-1950); studied at Cambridge, then lectured at Glasgow until his sudden early death.
10. Edward Hindle, F.R.S. (1886-1973); Regius Professor of Zoology at Glasgow 1935-1943. Helped establish the Glasgow zoological gardens at Calderpark, and became the first scientific director of London zoo on leaving Glasgow. Known for research on insect-borne diseases such as leishmaniasis and yellow fever.
11. Otto E. Lowenstein (1906-1999); German Jewish zoologist: moved to U.K. in 1933 for further study; on staff of Glasgow Zoology 1938-1952, then Professor at Birmingham. Research on hearing in fish.
12. See *Gallery*, note 106.
13. See *Gallery*, note 108.
14. John Anthony Downes (1914?-2003); Entomologist who specialised in Diptera. Studied zoology at Imperial College, starting on the same day as Roy Crowson (note 22). Lectured at University of Glasgow 1940-1953, then moved to the Canadian National Insect Collections, Ottawa.
15. James D. Robertson (1912-1993); Glasgow-born zoologist; first degree University of Glasgow, Ph.D. Cambridge, then lecturer, professor at Glasgow until retirement. Research on physiology of aquatic vertebrate body fluids and their bearing on vertebrate evolution.
16. Harry D. Slack (1907-1982); grew up in Derbyshire; studied zoology at the University of London; Ph.D. Edinburgh; lectured at the University of Glasgow 1937-1972. Carried out extensive research on the ecology of Loch Lomond, and was instrumental in the foundation of the Loch Lomond field station(s).
17. Hugh F. Steedman (1907-1991); lectured at Glasgow 1945-1964. Best known for his work on microscopical techniques, especially section-cutting and preservation methods.
18. L.H. Finlayson; Glasgow zoology graduate 1945; insect physiologist. Progressed to become professor at Birmingham from 1965.
19. W. Russell-Hunter (1926-2005); Glasgow graduate 1946, then Ph.D. and D.Sc. by 1962. Lectured at Glasgow 1947-1963, then moved to Syracuse University, New York state. Researcher and writer, including influential textbooks, on marine and freshwater invertebrates, especially molluscs. Remained a member of Glasgow Natural History Society until his death. Obituary by Peter Maitland, *The Glasgow Naturalist* 26(4), 165-166 (2006).
20. See *Flourishing* for an account of the Agricultural Zoology degree and staff.
21. Sir Iain Colquhoun (1887-1948); Laird of Luss and chieftain of Clan Colquhoun. A First World War hero, but also known for being court-martialled after agreeing with German officers to a Christmas truce in 1915. Rector of the University of Glasgow 1934-1937.
22. Roy A. Crowson (1914-1999); lectured at Glasgow from 1949 and continued research-active until his death. Evolutionary biologist and insect systematist internationally-renowned for his work with Coleoptera. Produced a higher classification of beetles based on anatomical and larval characters, rather than simply on external morphology. This work used the Hunterian Museum's collections, and many specimens from his own fieldwork around the world (much of it assisted by his wife Betty, a University of Glasgow zoology graduate). The latter collections are housed in the Hunterian Museum and the NHM (London). Many new taxa were named by him, and in his honour, such as the monotypic genus *Crowsoniella*. His massive *Biology of the Coleoptera* (1981) became a standard work on the subject.
23. Glasgow Veterinary College was founded in 1863 and allowed training of veterinary surgeons qualified to register with the Royal College. The College was merged with the University of Glasgow in 1949, and became a Faculty in 1968. A new veterinary hospital and research facility was built at Garscube estate on the northwest edge of the city in the 1950s, with teaching facilities added later. Parasitologist Adrian Hopkins became a member of the zoology staff from 1949. See *Flourishing* for more on him and parasitology at Glasgow.

24. R.B. Clark (1923-2013); lecturer at Glasgow 1950-1956; later at Bristol, then professor at Newcastle from 1965. Worked on structure/function of annelid worms, culminating in his book *Dynamics in Metazoan Evolution* (1965) which drew on his early studies in mathematics and physics. In Newcastle, actively involved in the natural history of the northeast, and research moved into the field of marine pollution. He served on the Royal Commission on Environmental Pollution. Obituary by Olive & Hutchings, *Memoirs of the Museum of Victoria* 71, 361-366 (2014).
25. Arthur Clarke: no retrievable information.
26. Samuel Anthony Barnett (1915-2003); studied zoology at Oxford. In World War 2 advised the U.K. government on rats and plague. Lectured at Glasgow 1951 to 1971 as first animal behaviour specialist. Became professor at Australian National University, Canberra 1971-1980. Prolific author of books on behaviour, evolution. At Glasgow, worked on the adaptations of small mammals to cold. Had radical ideas on education: the editor recalls Barnett's "free group discussions" on concepts like instinct, consciousness and adaptation with awe.
27. Mike V. Brian OBE (1919-1990); lectured at Glasgow 1946-1953. Became officer in charge of the Furzebrook ecology research station, 1953-1982. Entomologist, ecologist, lifelong student of social insects. Obituary by Elmes & Stradling, *Insect Societies* 38, 331-2 (1991).
28. Anthony F.G. Dixon ; lectured at Glasgow from 1957; moved to the University of East Anglia as professor. Researcher on the ecology of aphids and other insects.
29. Graham Hoyle (1923-1985); neuroscientist and comparative muscle physiologist. D.Sc. and lecturer 1952-1959 at Glasgow; moved to the U.S.A. and was professor at the University of Oregon till his death. Perspective article by Medler (2023), *Advances in Physiology Education* 47, 893-903.
30. Peter N.R. Usherwood; Ph.D. (1960) and Lecturer at Glasgow (from 1960) working with Hoyle on insect neuromuscular systems. Left to become professor at Nottingham 1974.
31. Millport: see *Flourishing* for an account.
32. Gareth Owen CBE (1922-2002); Welsh zoologist. Lectured at Glasgow 1950-1964, then professor at Queen's, Belfast 1964-1979; Principal of the University of Wales, Aberystwyth 1979-1989. Research on the functional morphology of brachiopods and bivalve molluscs, using electron microscopy.
33. John A. Allen (1926-2020); lectured at Glasgow 1951-1955, and was later Director (1976-1991) of the University Marine Biological Station, Millport, where he again helped teach Glasgow students. Research on deep sea ecology, especially of bivalve molluscs.
34. Alan D. Ansell (1934-1999); Ph.D. (1959) and lecturer at Glasgow 1959-1961. Worked at the Scottish Association for Marine Science (SAMS, Oban) 1969-1999 on molluscs, especially bivalves.
35. John Murray; see *Gallery*, note 15.
36. Hugh Elder; Glasgow zoology B.Sc. (1959), Ph.D. (1972) and lecturer 1962-1966. Moved to Glasgow Physiology department as an electron microscopist.
37. Tom Goreau (1924-1970); marine biologist, working especially on coral reefs around the Caribbean. Died of cancer following exposure to radioactive samples collected at the American atomic bomb testing site at Bikini atoll, Marshall Islands.
38. Mary McDill began her secretarial career in Zoology in 1951, progressing to become principal secretary, indispensable to successive regius professors. Alex McKinnon was a technician in Zoology 1914-1964, latterly as chief technician, another indispensable part of an efficiently run department. Jan Campbell (later Meadows) graduated B.Sc. in zoology in 1955, and became research assistant to Professor Yonge. After his departure, she became assistant to lecturer Peter Meadows, whom she married. She co-authored the book *An Introduction to Marine Science* (two editions: 1978 and 1988) with Meadows. They later divorced. Jan Meadows acted as administrative co-ordinator of the Biology-1 course from its inception in 1969.
39. David R. Newth (1921-1988); studied Zoology at University College London; after war-time service, he became a lecturer there, then inaugural Professor of Biology as Applied to Medicine at Middlesex Hospital Medical School in 1960, and Regius Professor of Zoology at the University of Glasgow from 1965, retiring through ill health in 1981. He was a specialist in developmental biology, serving as President of the British Society for Developmental Biology and second editor of the Journal of Embryology and Experimental Morphology for 10 years. He also had wider interests, being President of the Scottish Marine Biological Association and a council member of the Nature Conservancy Council.
40. Keith Vickerman (1933-2016); born in Huddersfield, an enthusiastic naturalist from an early age, especially keen on tiny organisms requiring a microscope for observations. Zoology degree at University College London, Ph.D. Exeter then back to UCL as a protozoologist. Research on sleeping sickness (trypanosomiasis) began his major life's project on life history changes in parasites and especially the antigenic variation that allowed them to evade the host's immune response. Moved to Glasgow 1968; Regius Professor 1984-1998; elected FRS 1984. Post-"retirement" research on soil protozoa and a new parasite of scampi. Keen gardener: served as President of Friends of Glasgow Botanic Gardens. Obituary by Cox (2017), *Parasitology* 144, 1-3.
41. Donald A. Ede (1926-2018); developmental geneticist, especially interested in vertebrate limbs. Moved from the Genetics Department of Edinburgh University in 1972 to head the new Glasgow developmental biology unit. Pioneer of the use of computer simulations. Retired 1998.
42. Nuffield Teaching project: see *Flourishing*.
43. Queen Margaret College began as North Park House, 1871; bought by Isabella Elder in 1884, and became a College for Women, 1892 and part of the University. From 1936-2007, it was headquarters of the BBC in Scotland. After

their removal to Pacific Quay, extensive demolitions returned the build to more like its original, and it became headquarters of the G1 restaurant group.

44. See *Gallery* for JGK's Gran Chaco experiences.
45. In the early 20th century, there were two opposing theories on the origin and structure of nerves: a) nerves were syncytial structures formed from the fusion of glial cells; b) nerve fibres extend by growth/movement from early nerve cell bodies. The great cell biologists Golgi and Cajal were on opposite sides of this debate and argued their different cases in the lectures given after their joint award of the Nobel prize for physiology in 1906. JGK, with Golgi, favoured the syncytial theory. The matter was essentially settled by Ross Harrison, who grew isolated spinal cord fragments from frog embryos, inventing the procedure of sterile tissue culture to do so. He observed the "growth cones" of individual neurones moving out of the fragment by a process like amoeboid movement, with the long thin axon extending as the growth cone moved out. The observations were reported in a series of papers from 1906. The longest one in 1910 included a refutation of the criticism made by JGK in his Presidential Lecture to the Royal Physical Society of Edinburgh (Kerr (1910), *Proceedings of the Royal Physical Society* of *Edinburgh* 18, 1-20.). See Keshishian, H. (2004), *Journal of Experimental Zoology* 301A, 201-203 for an account of this debate and its resolution.
46. Sir Alister Hardy (1896-1985); marine biologist and artist, had been a camoufleur in World War 1. Wrote two much-read books in the Collins New Naturalist Series on *The Open Sea.* Worked at the universities of Hull, Aberdeen and Oxford. Known for a controversial theory on human origins, the aquatic ape hypothesis. John Maynard Smith (1920-2004); began his career as an engineer, but later switched to biology, specialising in studies on evolutionary theory. Wrote semi-popular book *The Theory of Evolution* for Penguin Books, and developed the idea of evolutionary stable strategies. Professor at University College London and Sussex. Sir Peter Medawar (1915-1987); Brazilian Lebanese in origin, but career in biological sciences in the U.K. Worked on the immunology of tissue transplantation, winning the Nobel Prize for physiology/medicine in 1960. Professor at Birmingham and University College London, then Director of the National Institute for Medical Research at Mill Hill; as well as publishing many scientific papers, wrote extensively on the practice and philosophy of science.
47. See the article by Downie *et al.* on *Student Initiatives* in the following section for more information.