



Stanley Kemp.

STANLEY WELLS KEMP

1882-1945

Stanley Kemp, Sc.D., F.R.S., Secretary of the Marine Biological Association of the United Kingdom and Director of the Plymouth Laboratory, died on 16 May 1945 at the age of 62. His death at the height of his power has come as a most grievous blow to both marine science and zoology in general.

It was typical of his character that he hated anything in the nature of exaggeration; knowing how strongly he felt this, I must be particularly careful in the use of words, yet, to give a true impression, the fact must be recorded that so many on first hearing of it used the word disaster to describe the effect of his loss upon our science. We all felt it as a calamity; he was our undisputed leader. Before becoming Director at Plymouth he had organized and led the expeditions of the *Discovery* Investigations, the greatest oceanographical enterprise since the voyage of the *Challenger*. At the time of his death he was the inspiration of so many plans, not only for the development of the Plymouth Laboratory emerging from the blast of bombardment, but for the future of home and empire fisheries and of oceanography in general. His sound judgement will be equally missed in the councils of pure zoology.

I have stressed first our sense of the loss of a great leader—but he was also a great friend, beloved by so many and by all who served under him.

Future generations might wonder what was the secret of his outstanding position: his scientific publications were in the main in a somewhat restricted field of zoology, he was not a writer of books and he always shunned publicity. We, his contemporaries, and particularly those who served under him, know what it was: it was not an autocratic power but an exceptional capacity for a most energetic devotion to the task in hand, the example of which compelled all his followers to action. There was no parade of this unselfish devotion, no Dedication to Duty atmosphere; he just went full steam ahead carrying everyone with him: as someone aptly said, 'he put through the big and difficult jobs without any fuss or heroics'. Kemp's lasting monument will be the great series of *Discovery Reports* (now in volume XXIV with many more likely to come); the foundation of this work and so much of its achievement is due to his energetic planning and leadership, yet characteristically his name as author (and each time as joint author) appears on only three of the *Reports* so far issued. He was the spirit behind it all, filling his time with making perfect the many sides of organization and so willing to give the kudos of authorship to all his staff. How in his modesty he would hate to hear all this said! I can almost hear him now replying to a speech I made in his praise at a dinner when he left the *Discovery* Directorship to become Director at Plymouth; instead of the thanks I had expected for my words, with a pretence at scorn but with a

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twinkle in his eye for my benefit, he dismissed them as: 'This nauseating eulogy.'

With this introduction I will now attempt to sketch his life, and in doing so acknowledge much information kindly provided by his friends. He was born on 14 June 1882, the son of Stephen Kemp, F.R.A.M., who was an eminent pianist and Professor at both the Royal Academy and Royal College of Music. He was educated at St Paul's School and Trinity College, Dublin. A keen naturalist from early youth, his first love was entomology: a love indeed he never lost; it was a great joy to him that his daughter Belinda followed in his footsteps in this, and he once confided to me that it gave him particular pleasure because it provided him with an excuse for once again indulging in the delights of butterfly hunting. With her I believe he collected all the British butterfly species, and later turned to beetles. But to return to his youth, his gift for organization was evident from early days: he paid his small sisters a farthing for each caterpillar they brought him! Water beetles and dragonflies were a particular interest. As a schoolboy he built an aquarium on perhaps a somewhat ambitious scale at the top of the house, but alas, when filled, the water pressure proved too much for its sides; it came asunder and the flood penetrated to every floor below.

At Trinity College, Dublin, Kemp had a distinguished University career graduating in 1903 with a 1st Senior Moderatorship (Gold Medal) in Natural Science, with Zoology as his special subject.

His very active life may now be divided into four distinct phases: in the Irish fishery service from 1903 to 1910; as a zoologist in India from 1910 to 1924; Director of the *Discovery* Investigations from 1924 to 1936; and Director of our Plymouth Laboratory from 1936 to the time of his death.

Kemp was appointed Assistant Naturalist in the Fisheries Branch of the Department of Agriculture and Technical Instruction of Ireland as soon as he had graduated in 1903. At this time E. W. L. Holt, then Scientific Adviser to the Fisheries Branch, was organizing a series of cruises with the fishery cruiser *Helga* (later called the *Muirchu*) to explore the life of the continental slope to the west and south-west of Ireland from 300 to 1000 fathoms. In this work Kemp took a prominent part, gaining a thorough practical knowledge of marine zoology and oceanographical methods. From this experience he contributed the valuable section on the equipment of yachts for marine investigations in Fowler's well-known volume, *Science of the Sea*. His first zoological paper was on the echinoderms of the coast of Galway and of the deeper water to the west, but it was the decapod Crustacea, particularly the *Natantia*, that claimed his main interest, and in these he has always been our leading authority. In this period he was the author of a series of papers in the *Scientific Investigation Reports* of the Irish Fisheries: 'The occurrence of the genus *Acanthephyra* in the deep water off the west coast of Ireland' (1905); 'Macrura from the west coast of Ireland' (1906); 'Decapoda' (1907); 'The Decapoda *Natantia* of the coasts of Ireland' (1910), containing detailed figures of all

known Irish species; 'The decapods of the genus *Gennades* collected by H.M.S. *Challenger*' (1909); 'The Decapoda collected by the *Huxley* from the north side of the Bay of Biscay in August' (1910); and 'Notes on the Photophores of decapod Crustacea' (1910). The magnificent collections of deep-water life made later under his leadership on the R.R.S. *Discovery* and the R.R.S. *Discovery II* are in no small measure due to his early experience of work over the Irish continental slope. For some few years before his death he was advocating and eagerly looking forward to taking part in a renewed investigation of this deep-water fauna to the west of Ireland; this he had hoped to organize soon after the war. He felt strongly that this field, so rich in interesting problems and relatively so near at hand, was worthy of a much closer attention by our marine biologists; it is to be hoped that it may not be long before his lead may be followed.

In 1910 Kemp accepted the appointment of Senior Assistant of the Zoological and Anthropological Section of the Indian Museum, which was later, in 1916, reconstituted as the Zoological Survey of India. Here he took up again the study of the Crustacea, continuing the work begun by Mr J. Wood Mason and Colonel A. W. Alcock on the Indian Decapoda. During his fourteen years in India he wrote a series of seventeen papers under the title of 'Notes on decapod Crustacea in the Indian Museum' (1910-1925). Other crustacean papers were his 'Notes on Asiatic species of the Crustacea *Anostraca* in the Indian Museum' (1911); 'An account of the Stomatopoda of the Indo-Pacific region' (1913); 'The pelagic Crustacea Decapoda of the Percy Sladen Expedition in the *Sealark*' (1913); 'On a collection of stomatopod Crustacea from the Philippine Islands' (1915).

It was an excellent policy of the Indian Museum, and later of the Zoological Survey of India, that its officers should spend a part of every year studying and collecting animal life in the field. Kemp made many such expeditions. In 1911 he visited the Kumaon Lakes in the lower ranges of the Western Himalayas at altitudes ranging from 3600 to 6400 feet. In November of the same year he accompanied the Abor Expedition to the region where Assam and Tibet meet on the north-east of India. It was on this expedition that he discovered a species of a new genus of peripatus which he described under the name of *Typhloperipatus williamsoni*.

In 1913 and 1914 he visited the extreme south of India, making collections around Pamban and Rameswaram Islands and on the mainland at Mandapam and Kilakarai; also in 1914 he assisted Dr Annandale in an investigation of the Chilka Lake in Orissa.

In 1915 Kemp was collecting on the tropical coral reefs of the Andaman Islands, where the wealth of the fauna made a great impression on him, and later in the same year he visited the Sundarbans to investigate the life of the Matlah River and Gangetic Delta.

He became Superintendent of the reconstituted Zoological Survey of India in 1916. He was for a time on war work in which he took a prominent

part in an investigation to see if the water-snails of India could become infected with the larvae of the parasitic trematode *Schistosoma (Bilharzia)*. Since many Indian soldiers returning from service in the Middle East were suffering from schistosomiasis, it was feared that they might introduce the disease into India, where it was hitherto unknown. Fortunately none of the Indian snails was found to become a carrier of the larvae. In 1918 he made an expedition with Dr Annandale into Seistan and Baluchistan. It would indeed take a large book to describe his many and varied activities during his period in India. Here I must be content merely to give some indication of his remarkable and tireless energy as a field worker, and conclude it with but a reference to two other expeditions: another visit to the coral reefs of the Andaman Islands in 1921 and an outstanding exploration of the Siju Cave in the Garo Hills of Assam in 1922. The results of these many expeditions are, like most of his Indian crustacean papers, published in the volumes of the *Records of the Indian Museum*.

In 1924 he was offered and accepted the Directorship of the *Discovery* Investigations. Before leaving this Indian section of his life, there are other important events to record apart from his zoological activities. In 1913 he married Miss Agnes Green, a daughter of that very remarkable man, the Rev. William Spotswood Green, C.B., whose versatility enabled him to be a country rector, a world traveller and the first climber of Mount Cook in New Zealand, an author of books on mountains and glaciers, and in addition Government Inspector of the Irish Fisheries (Kemp's former chief). The daughter of so active a father became the wife of an equally energetic husband, and her understanding of his passion for work contributed in no small measure to his great achievement. So many of us know what a very happy partnership they made, and have enjoyed such a kind and generous hospitality at their home.

In the same year as his marriage he received two honours: he was elected a Fellow of the Asiatic Society of Bengal (a select fellowship limited to fifty) and also a Fellow of Calcutta University. In the Asiatic Society, which he had joined as a member in 1910, he became Honorary Librarian in 1916 and Member of Council in 1917; during these years he performed a great service to those doing research in Calcutta by compiling a catalogue of all the serial scientific publications in the twenty libraries of the city, giving references to more than 3000 volumes. When on leave in 1919 he was granted the degree of Sc.D. by his old university, Trinity College, Dublin.

Now came the period of his greatest achievement when he returned in 1924 to become the first Director of Research in the *Discovery* Investigations. It was in the spring of that year that I first met him; I had had the great privilege of becoming his Chief Zoologist at the same time. I shall never forget the evening I spent with him at his London hotel after we had both been appointed: the first of so many happy nights (and days) of eager planning and discussion, the first meeting with so great a friend. 'Dr Kemp was tall and

finely built with a quiet but most powerful manner; this was combined with a sense of humour and a gift for genuine friendship. No finer leader and no better companion for a long and lonely voyage in Sub-Antarctic waters could be imagined.' I have quoted from the obituary notice in *The Times* (18 May 1945); it is I think a perfect description of him.

There may be little need to outline in detail the aims of the *Discovery* work, which must be familiar to every reader; yet it may be fitting to give space to some actual quotations from 'The Objects of the Investigations', written by Kemp himself as an introduction to Volume I of the *Discovery Reports* published in 1929. They will remind us vividly of the scale upon which he planned; while these were the authorized plans of the *Discovery* Committee, I am sure they would acknowledge them to be largely *his* plans.

The proposal to send a scientific expedition to Antarctic waters was initiated by Mr E. R. Darnley, Chairman of the present *Discovery* Committee, rather more than ten years ago. The proposal had in view the systematic exploration of all the economic resources of the Dependencies of the Falkland Islands, but the main reasons for it are to be traced to the very rapid development of the whaling industry in those Dependencies, and to the fears which arose that this industry, like others formerly existing in both northern and southern hemispheres, would prove shortlived. For this reason the investigations undertaken bear mainly on the bionomics of the whales upon which the industry is based. The desirability of executing coastal surveys in the interests of the vessels which navigate these dangerous and largely uncharted waters was also realized....

The main object of the work was thus to obtain further information on whales and on the factors which influence them....

It was realized at the outset that a great deal of valuable information could be obtained by examination of whales brought in by whale-catchers. The precise identification of the common southern rorquals could not be regarded as definitely settled, for though it was generally recognized that the Blue and Fin Whales of the southern ocean closely resembled those to which the same names had been applied in the north, the possibility that the southern forms might represent a distinct race could not lightly be dismissed. Some might think this a question of purely zoological interest, but it must be pointed out that it has a very definite bearing on the economic aspect of whaling. If the rorquals in the south can be shown to be racially distinct from those which live in the north some degree of isolation of the two stocks may be inferred, and conversely, if no such distinction exists, some intermixture of these stocks is rendered probable. In dealing with migratory animals such as whales accurate knowledge on this point cannot fail to be valuable. It may set a limit to the area through which the southern stock ranges, and it will inevitably be of importance in studies of migration. This problem of the racial identity of southern whales is being attacked mainly by statistical methods.

In the economic study of any mammalian stock there are certain elementary facts which must be thoroughly understood before progress can be made. Among the more important are the rate of growth, the age at sexual maturity, the time of pairing, the period of gestation, the number at a birth, the length of the suckling period and the nature of the food. In whales most of these facts are less easily ascertained than in other mammals and the information already available was very deficient. By special anatomical investigation it is, however, possible to obtain results which will throw much light on such questions, and the Committee consequently decided to build a laboratory at South Georgia....

But work on shore, no matter how intensively it is undertaken, can only give solutions to some of the problems which are involved. It requires to be supplemented by observations at sea, and the principal reason for such research is the necessity for a thorough study of the environment of southern whales. Experience has shown that the hydrological and planktonic methods employed by the International Council for the Exploration of the Sea have been productive of valuable results in the north-east Atlantic and it could not be doubted that equally good results would follow their application in the south. Whaling, like most fisheries, fluctuates greatly from season to season, and the cause of these fluctuations are to be sought in changes in the environment. The food of southern rorquals is now known to consist exclusively, or almost exclusively, of large Euphausian crustaceans, which themselves feed mainly on diatoms. On analogy with conditions ascertained in the north, the seasonal abundance of the Euphausians on the whaling grounds of the Dependencies will be preceded by a period of great reproductive activity in the phytoplankton. The phytoplankton in its turn is dependent on the physical and chemical constitution of the water, and it is to hydrological, and ultimately perhaps to meteorological conditions, that the fluctuations in the whaling industry are to be ascribed.

So much could be inferred from the scientific work which had been done in the north, but much special investigation in the south was needed before theory and fact were brought into accord. The life history of the Euphausian which forms the main food of whales was unknown and no information existed on its relations with the other constituents of the plankton. Knowledge of the southern phytoplankton was limited almost entirely to the specific identification of the various species, and data on the water movements and general hydrology of the south were wholly deficient.

It was accordingly decided to equip a vessel for oceanographic research in southern waters. The *Discovery*, originally built for the National Antarctic Expedition, 1901-3, of which Captain (then Lieut.) R. F. Scott was leader, was purchased and refitted for her new work, and in July 1925, with the consent of His Majesty the King, she was commissioned as the Royal Research Ship *Discovery*...

It is in these investigations that the *Discovery* has been primarily engaged during a commission which lasted two years, but before she left this country the Committee foresaw that the work was likely to be more than a single square-rigged vessel could undertake and that certain other lines of research were beyond her power...

Whales are well known to be migratory animals... In the economic study of whales it is of the utmost importance that we should have fuller and more accurate knowledge of these migrations... It is, for obvious reasons, more difficult to mark whales than fish, but as a result of experiments made before the *Discovery* sailed on her first commission, a practicable method was discovered...

In considering the design of a second ship for investigations in the south, the Committee attached great importance to this question of whale-marking. A vessel of comparatively high speed was necessary, built generally on the lines of a whale-catcher, but it was recognized that she would also be required to assist in routine work on plankton and hydrology, and it was also considered desirable that she should carry a full-sized otter trawl for the exploration of certain areas in the Dependencies which might prove commercially profitable.

These varied requirements have been successfully met in the Research Steamship *William Scoresby*. This vessel is named after the celebrated whaling captain, whose *Account of the Arctic Regions*, published in 1820, may be regarded as the first scientific contribution to the study of whaling. The *William Scoresby* was launched at Beverley on December 31, 1925...

The examination of the plankton conditions on the whaling grounds was already an important part of the programme of the *Discovery*, and in deciding what use might be made of occasions for work of a less obviously practical nature it was natural to

consider an extension of these operations. The more strictly economic results were to be sought in the upper layers of the water, and work at greater depths, while it might also prove to have practical value, would without doubt result in a material increase in our knowledge of the biology of southern waters. When opportunity permitted, plankton nets, up to $4\frac{1}{2}$ metres in diameter of mouth, were accordingly used at all depths, and by this means a large amount of valuable material has been accumulated during the two years of the first commission.

An examination of the bottom fauna was evidently less relevant to the main purpose of the work, and it was decided that deep-sea trawling, which necessarily involves a great expenditure of time, could not be undertaken. The *Discovery* was, however, supplied with a 40 ft. otter trawl and dredges, to be used in shallow water when circumstances allowed. The weather in the south is frequently unsuitable for off-shore work, and on a number of occasions the rich bottom fauna of the sheltered coastal waters of the Dependencies has been explored...

The above are but fragments broken from the grand sweep of his conception of what the *Discovery* Investigation should be. The long line of bulky volumes to which this was the introduction show how this great man had the power to convert his conception into accomplished reality. The fact that Scott's famous old *Discovery*, chosen for the work before Kemp was appointed, proved unsuitable for the wide ocean traverses necessary for a full realization of his plans did not discourage him. After the first commission Kemp set to work with renewed enthusiasm to lay down the requirements for the *Discovery II*. The new full-powered steamship sailed on her first commission, again under Kemp's leadership, in 1929: she is acknowledged by all to be the finest research ship ever built. 'After the experience gained in voyages extending over nearly ten years it would be difficult to devise any major improvements', writes Dr Mackintosh who succeeded Kemp as Director in 1936.¹ If it was unfortunate for the stocks of whales that, with the development of pelagic whaling ships, the fishery spread to all the waters round the Pole, it was a gain for oceanography. In the later years the work of the *Discovery II* was extended to cover the whole of the Southern Ocean, bringing back immense collections of plankton and hydrological data from her circumpolar voyages; it is now likely that we know more of the physics, chemistry and planktonic biology of these waters than of any other ocean in the world.

Countless memories come to mind of the months of planning for the first voyage. The old *Discovery*, bought by the Committee from the Hudson's Bay Company in whose service she had sailed since Scott parted with her, was found on a closer examination to require a great deal more reconstruction than was first anticipated; many of the timbers of the hull itself had to be replaced. All hope of sailing in the autumn of 1924 vanished, and it was not until the late summer of the following year that she was completely ready. Trying as were these delays to all of us eager to be off, every moment of the time was spent in preparation.

Kemp, with his ship's scientific staff of four, all worked in a room, none too large, at the top of the Colonial Office. There were J. E. Hamilton, naturalist

¹ *Nature*, Vol. CLVI, p. 42, 1945.

to the Falkland Islands Government, who had just returned to England to join the expedition, the late E. Rolfe Gunther then fresh from Cambridge, H. F. P. Herdman from Belfast, and myself. What a room that was: charts of the ocean, plans of the ship, samples of all kinds of gear filled it to overflowing. There we worked out every detail of the ship's scientific equipment and laboratories. The Marine Station too was designed and equipped to be sent out in advance in 1924 to be erected in South Georgia. With it sailed the shore party: N. A. Mackintosh, J. F. G. Wheeler, L. Harrison Matthews and A. J. Clowes to await our arrival in the South. From all this which might have been confusion, Kemp with his admirable blended qualities of tact, understanding and firmness, distilled an ordered progress. While we each had our different jobs to do, he supervised and discussed every smallest detail. The many new devices of plankton net design, opening and closing mechanisms, etc., described in Volume I of the *Discovery Reports* were invented in that room. Each was drawn to scale on squared paper, discussed, redesigned and redrawn perhaps several times before finally being passed for construction. All the different kinds of log books with their various headings and columns for the entry of hydrological and plankton data, also the many kinds of labels with spaces for the different entries, were evolved after much deliberation and the testing of various kinds of paper in sea water. Nothing was left to chance. It was this attention to small but vital points that contributed so much to the subsequent success in the field. In Kemp we saw the vision and imagination of the planner of a great enterprise combined with a remarkable grip of detail.

I am dwelling on these early days of *Discovery* history not for the history itself, so much has happened since, but to try and illustrate in different ways the qualities of our leader. The ship's reconstruction was hurried towards the end in an attempt to reach the South for the opening of the Antarctic summer season. We sailed from Portsmouth in July 1925 intending to carry out tests off the Bay of Biscay with the new deep-water echo-sounding gear then in its infancy, and to return to let the technical experts land in Falmouth before finally heading south. It proved to be a test of more than the echo gear; by good fortune, as it turned out, we struck a summer gale of unexpected violence in the Bay. The hurried final work on many of the fittings and hatchways were tested and found faulty and leaking as heavy green seas thundered on the decks and sent at times cascades of water into the cabins below. But for this gale we might not have had such a test till we were in the roaring forties of the Southern Ocean. We returned to lie in the river at Dartmouth for two months while she was made perfect. During these two months we saw a Kemp we had not seen before: Kemp the craftsman, the cabinet-maker.

In the former hurry to get the ship to sea so many of the details of laboratory fittings we had carefully designed and specified had not materialized; the essential little table racks for tubes and bottles to prevent breakage in a rolling ship, shelves and brackets to hold this and that upon the walls, racks for whale-

marking guns and many other such things were urgent needs. Under Kemp's guidance we all became workers in teak. His products, beautifully dovetailed and fitting to perfection, might have come from the hands of a Chippendale; they were superb. Mine I always maintained had a certain rustic charm about them: an artistic (if unintended) asymmetry. Cabinet-making—carpentry I'm sure he would call it in his modesty—was a hobby all his life, and Mrs Kemp has told me how the workshop was always quite the most important room in the house. He had made his daughter Belinda a beautiful desk complete with secret drawer; it perished along with all the family belongings in the Plymouth blitz.

Kemp was a demon for work of all kinds; he never seemed to tire. Some people have said, 'Did you not get on each other's nerves during the long tedious voyages out of sight of land for many weeks at a time?' The answer is that we never had time to get on each other's nerves—and the time went all too quickly and was never tedious. If we were not working routine hydrographic and plankton stations, as so often we were, then at intervals the larger nets were lowered to great depths to explore the bathypelagic life; the sorting into groups, writing colour notes of fresh specimens, preservation and labelling of the very varied contents of the hauls kept us busy. Whenever we had time to work in shallow water—perhaps when prevented by storms from work in more open sea—then we used the dredge or small trawl. The amazing richness of the benthic fauna of the sub-Antarctic seas has to be seen to be appreciated, I have known a single morning's dredge haul in the Brandsfield Straits keep us occupied all day and half the night in making sure we had found everything worth taking. There can never have been a more enthusiastic collector than Kemp; he showed us how collecting should be done. First we sorted out for separate preservation all the larger forms—the sponges, coelenterates, polychaetes, molluscs, polyzoa, echinoderms, ascidians, etc., in great variety—treating some before fixation with this narcotic, some with that, to give the best result for later systematic or morphological examination. The polychaetes for example were narcotized, and then one by one laid out in flat trays on blotting paper while they were fixed in a shallow layer of weak formalin and then transferred to spirit in separate tubes. Some specialists asked us to preserve material for them in particular ways: Professor Graham Cannon, for instance, was keen on certain crustacea fixed in Dubosc (we always kept a special pot in the laboratory labelled 'Cannon fodder'). Then we turned to deal with collections caught in little fine nets which Kemp (following Holt's example) had cunningly fixed to the back of the dredge or trawl to catch the host of small crustacea stirred up and passing through its meshes. Next we sieved the sand, gravel or mud for the tiny forms which might easily have been thrown away. Then had we finished?—dear me no! Kemp could extract much more from the haul and from his team working like blacks. He then showed us how by splitting open fragments of crumbling rock, kelp roots and bits of coral, what an assemblage of small burrowing forms of life were to be

found in unexpected places. What a zoological education it was. I've said we worked like blacks—but we were not driven, we were compelled by his example and enthusiasm. If we stopped for a moment's relaxation, on he went, tireless, sometimes into the early hours of the morning. The large *Discovery* collections in the British Museum are products of Kemp's zeal. No one could make people work so willingly as he did.

The charming Victorian vignettes which form the tail pieces in some of the *Challenger Reports* caused us no little amusement. We compared ourselves—Kemp always leading, hauling on ropes, grovelling among the contents of the trawl, bespattered with mud and looking like a gang of pirates—with the elegant immaculately dressed naturalists of the *Challenger* who stood by with an almost nonchalant air while the common sailors soiled their hands in picking out the contents of the dredge. No doubt those *Challenger* pictures were the products of an armchair artist's imagination—but at times we used to wonder, and it was always a good joke.

When we were working routine stations—a long vertical series of water-bottle and plankton samples followed by towed nets—at intervals of ten miles, we were indeed pressed for time. Hardly had we got one lot of samples safely bottled and labelled and logs written up before we were on the next station. It was continuous work broken only by hurried meals. I've never met anyone who could eat a good meal so quickly as could Kemp; we could never keep pace with him! Down we dashed to feed—usually before we had finished our first course he had got through his second and was up once more on the job on deck.

With Kemp so much work led not to dullness; it was always work with gusto. He combined this passion for getting the most out of whatever he had in hand with a rich sense of humour. He sang most beautifully and was a devoted admirer of Gilbert and Sullivan. On Saturday nights we usually had a ward-room sing-song gathered round the piano while our old Chief Engineer (the late Commander W. A. Horton, R.N.) hammered the keys. Kemp's songs from his extensive repertoire from the Savoy operas were always the high lights of the evening, and he brought out the Gilbertian fun to the full; but perhaps our favourite was his rendering of 'My old Shako', called for again and again when, in later London reunions, we lived once more those happy nights of friendship. His joy at the merriment of those occasions was as great as that of the youngest of us; he was always with us by the piano joining in the choruses and contributing as much to the fun of the evening as anyone. In vivid memory I can see him helping the most junior scientist to impel the reluctant Third Officer to give 'The Fishermen of England', or see him enjoying the 'I belong to Glasgow' of our incomparable Scots comedian (Andrew Porteus, Second Engineer and later Chief), and those hilarious ditties from the Week-end Book. He had the capacity for the enjoyment of people, so long as they were honest and unpretentious.

He had both a keen musical and artistic sense. He followed the attempts

that several of us made to sketch in water colours with a kindly interest and encouragement. He was himself a real artist with the camera. He did not take many photographs, but those he took were superb not only in technical excellence, bringing out a wonderful range of delicate light and shade, but in their viewpoints carefully chosen to give pictures of perfect composition. His series of polar studies showing the mountainous regions of Graham Land and the Palmer Archipelago must rank high among examples of landscape photography.

Kemp's modesty might almost be considered a fault. When he had to speak in public on the work of the *Discovery*, he was so anxious not to give the false impression that we were heroic explorers suffering the hardships and dangers of the great terrestrial polar journeys of Scott and Shackleton, that he tended to go too far in the opposite direction of overstressing what he liked to call the relatively prosaic nature of our undertaking. He so hated anything that hinted of glamour and the sensational, that few laymen on hearing him speak of the enterprise he had so largely planned and carried into effect realized its true scientific importance or the greatness of the man who spoke.

He was elected a Fellow of the Royal Society in 1931 and served on the Council in 1935 and 1936. In the latter year he was awarded the Victoria Medal of the Royal Geographical Society.

To the staff of the *Discovery*, and to those who like myself had left it to take up other work, the news of Kemp's resignation from the Directorship to follow Allen at Plymouth came as a blow. Of course he was right. He had built up the *Discovery* Investigations into their great oceanographical position and he was leaving them in excellent hands. Plymouth meant so much not only to British marine biology: Allen like Kemp had built up our institution into one of world-wide importance. Kemp was *the* man to follow him.

He became Director of our Plymouth Laboratory in 1936. Of his work here I cannot write as I have done for his *Discovery* period, from the inside, but I know from my visits and talks with friends on the staff that he has inspired the same spirit of endeavour, loyalty and friendship that we knew in the *Discovery*. He was the beloved Director of both.

At Plymouth, Kemp's task was somewhat different from that of directing his great expeditions. The *Discovery* Investigations are a supreme example of planned research: a plan with many different parts but all interlocking to form a closely integrated whole. Plymouth, while undertaking some investigations having a more direct economic bearing, is essentially a home of 'pure' research where many different lines of independent enquiry are being pursued by the various members of the staff; it is too the Mecca of British zoologists going there to carry out their particular private researches. Kemp maintained this tradition. As did Allen before him, he had the faculty of developing a genuine interest in the widely different fields of work going on. He always tried to see how he could help each worker towards better facilities and equipment if such were possible.

His keen interest in some of the major problems being studied at Plymouth was well shown in his Presidential Address to the Zoology Section of the British Association at its Cambridge meeting in 1938.

Because I was never working at the Laboratory at the time of Kemp's directorship, I have thought it would be fitting to quote from two who were with him. I asked one member of the permanent staff, Mr F. S. Russell who has succeeded him in office, and then one who was a visitor at Plymouth on special work, Dr F. Gross, to give me in a few words their impression of Kemp as Director.

Mr Russell writes as follows:

When Stanley Kemp came to the Plymouth Laboratory to take control very few of us knew more of him than his name and reputation. In a very short time, however, his personality made itself felt and we soon realized that we had in our new Director a great leader of men. We quickly found that he was a man of most determined character, with pronounced ideas of his own, yet he was always willing to listen to others' views and if convinced would give full credit and whole-hearted support. He had greatness of character with a forthright and generous manner, and his lovable nature quickly endeared him to all. His was that rare charm of manner which made you feel when talking with him that you were his only interest. You felt that his thoughts were all for the welfare of others, and he would spare no effort to get the best for everyone.

He could not hold with niggardly ways and almost ruthlessly cleared the boards to make things clean, simple and straightforward.

On coming to Plymouth Kemp took over a scientific staff already in being, and throughout his remaining years there was no change in this staff. All were well content to remain under him. Only three years had elapsed when war broke out and many of his staff became scattered on war service. He therefore had little time to influence the scientific activities of the Laboratory. But it was already evident that his mind was wide enough to realize the value of the Plymouth tradition. Essentially a faunistic biologist himself, he had not previously had very much contact with the work of a more experimental nature which plays so important a part at Plymouth. Yet he quickly realized the value of these researches and, far from attempting to divert the staff into more orthodox biological channels, he was only too anxious that all facilities should be given in such work.

It is, however, certain that given the necessary time his impress on the Plymouth work would have been very marked. With his wide experience of faunistic investigations and oceanographic research he was aiming at carrying the work of the Laboratory further afield to embrace the larger area of the mouth of the English Channel and the Continental Shelf. His hope must certainly have been that the marine biology so typical of Plymouth and oceanography so typical of his 'Discovery' should flourish side by side.

During the war years the researches at Plymouth were necessarily greatly reduced by the absence of so many of the staff. Kemp made every effort to assist and develop any marine biological work that might prove useful in the war effort. In this he was concerned mainly with algal researches, much of which he directed from Plymouth. He was also very actively engaged in planning for the future and he devoted much time and thought to the development of Colonial Fisheries Research. In this his very wide experience and his knowledge of India and the Colonies proved of great value. Even to the end, although a very sick man, he carried on with his plans for the future with indomitable courage and tenacity.

His duties as Director and his many outside activities left him little time for his own researches, yet he snatched what moment he could to continue his studies on deep sea prawns, representatives of the group which was his chief life interest.

In a very short time after his arrival at Plymouth Kemp set to work on a much needed extension scheme. For some years past the Laboratory had been overcrowded during the summer months. The cubicles and tanks in the main building were out of date and needing repair. The job was tackled in a manner typical of the man, and great thought was given to making the most of the space available. The finished result was that the main Laboratory gained an additional floor and had well-fitted working rooms throughout, with clean-lined and up-to-date tanks and a museum for type specimens. There is much there to remind us of Kemp the craftsman. The woodwork and fittings were most carefully chosen and the rooms equipped with furniture of useful and pleasing design. In addition to this extension a much needed cleaning up and simplification of existing installations such as the engine room, heating appliances and so on was undertaken, and throughout could be seen his desire for general improvement and modernizing of equipment to reduce unnecessary labour.

It was to all of us a great tragedy that the war came just when this work was completed and Kemp never saw the new accommodation really filled under peace-time working conditions. Members of the Plymouth staff appreciate working in surroundings both workmanlike and pleasing which they owe to him.

The Plymouth Laboratory and the welfare of his staff were always foremost in our Director's mind. He had great plans for the future and during the darkest hours planned for the renovation and rebuilding of the Laboratory. We only wish that he were here to-day to carry us all through the difficult times created by the war.

Dr Gross writes:

I gladly give you my impression of the late Dr Kemp. I was fortunate enough to be working at the Plymouth Laboratory from 1935-1937, i.e. during the transition period when the directorship passed from Dr Allen, that great and benevolent man, to Dr Kemp. From my first contact with him my impression was that of a great personality, possessed of boundless energy and organizing ability, and a rare grasp of problems however far outside his own field of work they may have been. I was greatly impressed by his vigorous interest and keen appreciation of the necessity for modern equipment for work of experimental nature. I remember that on more than one occasion, when I outlined to him a piece of research for which the facilities of the Laboratory were not adequate, understanding was rapidly turned into action, interest into energetic support. He had the broad outlook, tact and judgement which made him a great director, inspiring all workers at the Laboratory with a team spirit and a sense of purpose which, but for the outbreak of war, would have enormously enhanced the progress of marine biological research in this country.

Those who were present on the night of the bombardment are agreed that the reason the Laboratory was not completely destroyed by fire was largely due to Kemp's unselfish action in letting his own house burn while he devoted all his energies to preventing the fire from spreading through to the rest of the building. This means all the more when we know what a home lover he was and what a sacrifice he made. He was a collector of beautiful antique furniture, old clocks, and rare oriental carpets chosen with great discrimination. He and Mrs Kemp lost everything. Not only did he lose all his books—he lost all the material and manuscript notes of a work on the *Discovery* deep-water decapod Crustacea he had been engaged on for many years.

It seemed to me appropriate that there should be in our *Journal* a record of what happened in the bombardment, and I thought that no better place for it could be found than appended to this tribute to our great friend. Mr D. P. Wilson, who was with Dr Kemp through that night, has kindly provided me with a graphic account of what took place. He feared it was too long and gave me leave to cut it as I thought fit—but I feel sure all will agree that it should be given in full as follows.

It was just getting dark on the evening of 20 March 1941 when the alert sounded; the time was about 8.30 p.m. Previously there had been many alerts and a number of sharp raids on Plymouth—the Laboratory had once had many windows broken—but there had been nothing in the nature of a 'blitz'. Coventry and other cities had suffered, but so far Plymouth was relatively untouched. As we hurriedly grabbed our equipment and gathered in the entrance hall, there is little doubt we all hoped this was just another quiet alert. We were soon disillusioned by a burst of heavy firing, the sudden appearance of parachute flares and of hundreds of incendiaries strung out along almost the whole length of Staddon Heights. For some weeks past the Laboratory had arranged a nightly rota of fire guards from amongst the staff to reinforce Dr Kemp and his family and the resident caretaker, Mr A. G. Butler. The guards this night were Mr E. Latham and myself; also in the building at the time were Dr N. K. Panikkar, Dr Mary W. Parke and Miss N. G. Sproston. As soon as it became evident that the enemy meant business Dr Kemp ordered the ladies down to the shelter, which had during the first days of the war been constructed in the lower part of the tunnel leading to the foreshore. Barely had they gone before heavy bombs were crashing into the town not far away, and more and more incendiaries were at this time making a fierce glare in the direction of Sutton Harbour. I remember Dr Kemp telling us a funny story, but of what it was about I have not the slightest recollection, my attention being fixed on other things, though I do remember pretending to laugh when he came to what must have been the funny part. As we stood outside watching the incendiaries on Staddon he remarked how pretty they looked. Showers of shrapnel sent us back into the entrance hall with the remark that the guns hadn't taken long to get going—'quick work', said Dr Kemp. A flare was hanging low over the Citadel, lighting up the whole of the Laboratory buildings in the ghastly manner peculiar to enemy flares. The roar of an aircraft mingled with the piercing rattle of machine guns aimed at the flare, there was a rushing sound as of corn sheaves blowing in the wind; in a moment incendiaries were bursting into flame all over the Hoe. It was obvious that the main bunch had missed us but there might be an odd straggler somewhere in the building. There was nothing to be seen round the front, so rushing through the Receiving Room, led by the Director, we made for the back. As he reached the door to the quadrangle he shouted, 'Get back, there is something coming.' Immediately was heard the familiar whine, getting louder; it was ours! Before we could move there was a heavy thud on the ground outside, followed at once by a blinding flash and a terrific blast which threw us to the ground in a heap. There is no doubt had we been outside at that moment many of us, if not all, would have been killed; the quick decision to keep us inside had saved us from anything worse than a severe shaking. The bomb had struck only eighty feet from the Receiving Room door and right outside the Director's kitchen window; it had only just missed penetrating the building. As we were picking ourselves up we were blown down again by blast from another bomb which had struck a grassy bank not far from the front door. When finally we did reach our feet we were already ankle deep in water flooding from burst aquarium tanks. Dr Kemp was soon back with the news that the largest tank and some others had gone and that conger eels and other fish were in the passage-ways, but we must leave them. He sent us on various missions to look for incendiaries; on my way back from mine—a quick agonizing survey of the first and second floors of the

main building where everything was a shambles strewn with broken glass—I met him coming up the stairs with a stirrup pump which he flung to me whilst he returned for another. He had from outside seen a fire in the back bedroom at the top of his house, everywhere else was clear. We hurried through the main laboratory to be delayed for a moment by the door from his office to the house; it was closed and jammed by a great pile of books which had fallen from shelves alongside, and could not be opened. Luckily the door panels had been blown out, so scrambling over the books we squeezed through into the house and ran up the stairs to the top floor. We found a blazing furnace with flames leaping out of the door. The blast from the bomb had wrecked the room thereby enabling the incendiary to start a big fire at once. We were two men with two stirrup pumps and a few buckets of water, attempting the impossible: the intense heat evaporated the jets almost before they had passed through the doorway and they made no difference at all. Whilst we sweated at the pumps the others were endeavouring to rig a hose from the water main outside; not until it was rigged did they find that there was no pressure, the second bomb having severed the pipe leading to the Laboratory. Upstairs we were running short of water for the pumps and Dr Kemp turned on his bath taps, but only the hot water was running. We took to throwing buckets of water on to the fire, though we could not get within more than a few feet of the door. The intense heat was already setting alight to woodwork on the landing and it was obvious that we could not hope to put out the fire unaided. In this dilemma he went to telephone for help, whilst Panikkar, who had now arrived, assisted with the pumping as we tried to hinder as much as possible the progress of the flames. The telephone was dead—the wires were down. Despatching Latham to get help, if he could, from the Citadel the Director returned to call us down from the top floor, for we were already in danger of being cut off by fire on the stairs. We continued to fight, as well as we could, from the first floor, dipping buckets of sea water from tanks in the main laboratory and spilling much of it in scrambling over the books in the office and in passing the buckets through the broken door panels. We wanted at this stage to save some of Dr Kemp's belongings but he insisted on continuing our efforts to delay the flames. He was prepared to let his own property go if only the fire could be kept from the other buildings. There was a good chance of doing this if we could prevent the fire passing the doorway between his office and the main laboratory. A thick stone wall isolated the house from the rest of the building except for the access afforded by this doorway; the merciful absence of wind encouraged our hopes. Back and back we were forced until by the time Latham returned from his hazardous mission to tell us that a squad of soldiers was on its way with a motor pump (he had met them coming, for our plight had been seen by the military) we were back almost into that strategic doorway itself. It was then that the most terrifying incident occurred. At the time Dr Kemp was holding the nozzle of a hose near the jammed and broken door between his office and his house; I also was well inside the office with another nozzle, somewhere near the middle spraying water on to the far wall. Latham, just inside the main laboratory was pumping. Panikkar and Butler had, I think, at that moment gone to meet the soldiers. Suddenly there was a noise overhead and a warning shout from the man at the pumps, 'Look out, the ceiling is coming down'. With a roar and a shower of blazing debris the whole fire fell about us. A great flaming beam and a smouldering mound of red hot ash lay between where Dr Kemp had been and myself. Half-blinded and choking from the fumes I was at that moment certain he was underneath. I had to kick myself free and run over the top of the mound to get out. There was no answer to my yell of 'Dr Kemp'. Latham left the pumps and dashed into the fire in the direction of where he had been. He too vanished, and still scarcely able to see I seemed at that harrowing moment to be left alone powerless to help, without even a tool to dig into the smoking ash which buried the hoses of our stirrup pumps and, as I supposed, him. After what seemed an age, but which could only have been two or three minutes at most, his voice and Latham's were heard calling from the ground outside and the

nightmare was over. By great good fortune the main fall of debris had just missed us both and he had made his escape by his own stairs, where Latham found him staggering down with his grandfather clock over his shoulder. He said he might as well take something out of the house with him and he had picked up the clock on his way. On getting outside his first thought was for his parrot and he rescued it just in time. Luckily the cage had been placed near the dining-room window and could be reached from outside.

The further proceedings can be told briefly. The men from the Citadel were soon throwing powerful jets of sea water from our reservoirs on to the flames, one hose being directed through that all important doorway inside the building. Except for acting as guides our work for the moment was over. We were exhausted and could do little more. What it must have meant to a man of Dr Kemp's age is better left to the imagination. Throughout it all he was a magnificent inspirer of courage; he was cool, calm and collected. It seemed almost a privilege to crouch on the floor with him each time a bomb whined down near by, some very close into the Citadel behind, or just missing our roof to crash on to the foreshore below. Often that night we must have been a target in the bomb-sights of the enemy.

As we gathered in the tunnel shelter after midnight when it was all over we were a sorry sight, filthily begrimed and burnt. The ladies themselves had experienced many moments of real danger, and of physical discomfort as when the aquarium water flooded down through the tunnel after the bursting of the tanks, but they had borne it all, and their terrible anxiety as to what was happening above, with great fortitude. Now they bandaged our burns and there were some lighter moments as when it was discovered that one member of the party was carrying around a pound or two of congealed lead on the back of his mackintosh. The lead had come from the flat roof and Dr Kemp had himself received a sprinkling of the molten metal on his head. His burns were treated with methyl violet and for the next few days his hair was rather a beautiful colour, much, we think, to his inward annoyance.

Dr and Mrs Kemp and their daughter had lost their home and almost all their possessions. It was amazing how little outwardly they showed it although within they must indeed have felt bitter. All the treasures of a lifetime were gone. We were all amazed, I think, how before the ashes had barely cooled Dr Kemp was already planning for the future, the future of the Laboratory, not his own. As we began the long depressing task of clearing up the mess he was already dreaming of a link between the eastern ends of the south and north buildings. How impossible and unlikely of fulfilment it seemed in those days when we were out night after night watching the searchlights and the bursting shells. How likely it seemed that another bomb would destroy everything. As it was, only the vigilance of the fire guards saved us from several fires started by incendiaries on succeeding nights, and a time-bomb which fell almost into the crater left by the first bomb was a menace to the building for several days. Throughout it all the Director kept his faith, and his vision of the future broadened into the fine plans for reconstruction and extension which he has left. As one who had the privilege to work with him on those plans I know the boundless energy and hard thinking which went into their making at a time when so many of us could barely see our way from one day to the next. Whilst for us the immediate present was the most pressing concern he was reaching out to a future when the storm would have passed and men once again could think in security.

Kemp with his great and buoyant spirit showed little trace of the strain he had been through and, as Wilson has just told us, was full of his plans for the future of our Plymouth Laboratory; but few of us can doubt that the strain of that night undermined his strength and brought on the illness that took him from us. Mrs Kemp and his daughter Belinda will know how deep is the sympathy of all the members of the Association for them.

A. C. HARDY