

**A brief history of**

**The**

**BRITISH SOCIETY OF ANIMAL SCIENCE**

**1944 – 2019**

**75 YEARS OF IMPROVING  
THE UNDERSTANDING OF  
ANIMAL SCIENCE**

**Colin Whitemore  
for BSAS**

This is an abridged version of the full-length document which may be found in the BSAS Archive. It is a fascinating and easily read account not merely of a Scientific Society, but of the personalities who made it. The Society was built upon the mantra that until a research finding is published, transferred to others and ultimately put to use for the benefit of food production and animal well-being, it has no purpose. The life of the British Society of Animal Science from 1944 to 2019 has been one committed to enabling the exchange of science amongst the membership. The Society has served well its members, the farm animals, and society at large, through the whole of the era of the second agricultural revolution.

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The information contained herein has been sourced by the author, and its interpretation is that of the author.

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### **Dedication**

BSAS is what it is because its members have volunteered for 75 years to work on its behalf. They should at least be properly thanked. I hope I may be forgiven for not mentioning them all by name. Maybe it will be enough that as I write of the Society's success, I write also of all of them.

I have been greatly helped in the preparation of the manuscript by those two stalwarts, Gerald Wiener and Mike Steele.

## 1. Pioneers: The backdrop to the Society's beginnings

Nineteen-forty-four, the year of the foundation of The British Society of Animal Production, and the early years that followed, were filled with urgent opportunity – these were the post-war hunger years and the beginnings of the second agricultural revolution. The time was ripe for research and development in Animal Science. Unsurprising then if that same time gave rise to pioneering people and pioneering places. In tracking the British Society of Animal Production (BSAP) first seventy-five years, it is neither possible, nor necessary to mention all and every path-maker involved in the moulding of the Society. The Universities and Research Institutes have been persistent in their support of the society, as have the Knowledge and Information Transfer Services, and perhaps most importantly of all the Trades and Industries that provide to the agricultural industry the wherewithal for its effective functioning.

### White, and Ewart's inheritance

The core of the British Society of Animal Production's values had been laid down through the early nineteen hundreds by a Scot, Thomas Middleton. Hailing from the Black Isle, Middleton was successively a Lecturer in Agriculture at Aberystwyth, Professor of Agriculture at both Durham (Newcastle-upon-Tyne) and Cambridge (First Drapers Professor, despite the University considering Agriculture insufficiently academic a subject for undergraduate study), Ministry civil servant, and Chairman of the Agricultural Research Council. Middleton saw that Agriculture could only feed the British Nation if a three-part plan, fully government-funded, was carried through. First, there would need to be basic research to determine facts and bring forward new knowledge. As the seekers-after-truth were not likely to be best employed spreading the word to practical agriculturalists, or to the agricultural trades and industries, a technological arm should be formed. This would be the Advisory and Development function which would both demonstrate innovations in practice and travel the field proselytising. The last of Middleton's elements was Agricultural undergraduate and postgraduate education at University level. This was the same three-legged stool upon which the British Society of Animal Production was founded and upon which the British Society of Animal Science (BSAS) still sits. BSAP from the start was the forum where Researcher, Technologist, Industrialist, Practitioner and Teacher could gather to exchange ideas, aspirations, information, facts, differences, and (occasionally) knowledge.

How was it that The British Society of Animal Production originated out of *Edinburgh*? Why Edinburgh, when *Cambridge* was the obvious choice? Cambridge was the home of William Bateson, FRS. At Cambridge also were T B Wood (Second Drapers Professor of Agriculture), H E Woodman, and R E Evans, the pioneers of the quantification of nutrient requirements of animals, and, not least, John Hammond and Arthur Walton, reproductive biologists in the process of revolutionising animal breeding through artificial insemination, whilst striving for an understanding of reproduction and growth in farm animals. Their work would effectively *enable* the second livestock-farming revolution that took place after the Second World War.

The obvious did not occur because of a persistently persuasive Borders Scot; Cossar Ewart, a Penicuik carpenter's son. Ewart was an animal breeder by trade – an animal geneticist. It was genetics that would be the core of innovations in Animal Science in the mid nineteen-hundreds when BSAP was launched, and Animal Genetics by that time had gone up to Edinburgh. By 1944 the balance had shifted. The axis for bright young talent in Animal Science was no longer at Cambridge – it was at Edinburgh. How had that happened?

Ewart delivered three quite outstandingly original contributions to Animal Science. First, he believed that if student learning was to have practical utility it should be founded not in didactic teaching and artful theorising, but in practical observations and live classes in the science laboratory and in the field. Second, he was convinced that research into matters agricultural needed to be conducted at agricultural scale. He set up an animal research farm, unheard of at the time, capable of containing *populations* of animals (flocks, to be exact). The third of Ewart's priceless inheritances to Animal Science was that, inspirationally, he stole the march on Cambridge by setting up a Lectureship in Genetics in 1911 in Edinburgh's Zoology Department (of which he was by now the head). Cossar Ewart had the foresight to recognise the talent needed in the post and appointed not a zoologist, but a young mathematician with a penchant for statistics.

To seal into place Edinburgh's pre-eminence in matters animal genetical, Ewart then went (in 1913) to The (HM Government) Board of Agriculture in London and got them to set up a Special Committee at Edinburgh, under the joint responsibility of the University and the East of Scotland College of Agriculture. The purpose of this Committee would be to forward the use of animal genetics to increase the rate of British food production from farm animals. It was Ewart's master-stroke.

Progress stalled until after the Great European War. In 1919 the Special Committee supported at Edinburgh an Institute of Animal Breeding and a Chair of Animal Genetics to direct it; the first incumbent of which was Professor F A E Crew. In 1927 a new building went up at The King's Buildings (which because of its grand steps and entrance was affectionately called the 'Town Hall' and now called The Crew Building), and into it went the Institute of Animal Genetics. (The

Lecturer in Genetics in 1928, it might be noted, was W.C. Miller, later to head up the Royal Veterinary College and become BSAP fourth President).

In parallel, the University set up the University Department of Genetics. No sooner had the Institute got up a head of steam than the Second World War intervened. It was decided (regrettably) that there should be clear division between the government-driven applied research and the University-driven basic research. C H Waddington was appointed to the University post in 1947 (a later Professor of Genetics, William (Bill) G Hill, would be The British Society of Animal Science's fifty-sixth President in 1999). On the 'other' side the Westminster government set up The National Animal Breeding and Genetics Research Organisation. The Agricultural Research Council instructed Professor R G White, then at Bangor University in North Wales to be the first Director of NABGRO (later ABRO) when it was formalised in 1943. White's ambitions were in Agricultural applications. He was clear on the matter of Genotype / Environment Interaction; better animals need better farmers, different production environments need animals of different types. White would become The British Society of Animal Production's second President (1945).

The tensions (usually virtuous, but by no means always) now created between the two parties in the Genetics Town Hall, have reverberated throughout the life of the British Society of Animal Science. The University academics with a dual teaching / research role and a bent toward fundamental research on the one side, and on the other, the Government funded researchers placed into dedicated research institutions charged with more directly putting food on the nation's table. It was White who established the ABRO field laboratories and farms.

The Second World War had depopulated the Institute of Genetics Building, which was now being refilled with floods of ambitious researchers and post-graduates. Amongst others, were Alan Robertson (BSAP twenty-fifth president, 1965, and Bill Hill's PhD supervisor) brought by Waddington from Coastal Command, and Squadron-leader Thomas Carter (to be head of The Poultry Research Centre which was established at The King's Buildings around the same time). Peter Wilson, the thirty-fourth (1977) President of BSAP, was there as a post-grad diploma student before becoming a research manager with the animal feed industry and later the Professor of Agriculture at Edinburgh University and Principal of the East of Scotland College of Agriculture.

Waddington's charismatic leadership attracted brilliant original thinkers intent upon what was to be the discipline of molecular biology, while White, as Director of ABRO, appointed a plethora of mathematical and reproductive biology talent. This was all crammed into the University's Institute of Animal Genetics building (The ABRO building was not built until 1964), and grand houses in the Edinburgh suburbs. The confusion of who did what, whose salary was paid by whom, and who was funding which project, would have been the downfall of anything other than an academic organisation (disorganisation) populated by bright minds with burning ambitions. Throughout the following years, through to the present time, there has been pretty much free movement of staff between Edinburgh University (Biology, Agriculture, Veterinary), The Edinburgh Research Organisations (PRC, HFRO, ABRO, Roslin), and the Agricultural College. This flux amongst so large and diverse a community has been a huge benefit to both scientists and industry, and bears testament to the advantages of a 'Centre of Excellence'.

White retired in 1950. H P Donald was appointed Director of NABRO in 1951. He was the Society's 30th President (1973). Donald brought with him his assistant – Gerald Wiener, in whose careful hands would lie the future of BSAP publications.

### **Hammond**

Perhaps Sir (1960) John Hammond, FRS (1933) is an eccentric enigma that could only have been spawned by, and survived in, the University of Cambridge, England, as that academic institution existed in the years between the two world wars. John Hammond was a farmer's son, from a family of veterinary surgeons, and never forgot it. It was good fortune that one of his father's friends was T.B. Wood of the Cambridge Department of Agriculture, for that is how he got to enter University. He then joined the staff there which had included Thomas Middleton and F.H.A. Marshall (with whom he studied reproduction, and who, in 1943, he would succeed as Reader in Agricultural Physiology). After the Great European War (where he had distinguished himself) he returned to Cambridge. There he would stay until retiring in 1954.

His most memorable utterance was "*Science is not science until it is applied*" – very fitting for BSAP. This was not just about the need to put science to industrial use; for science not to become a self-serving end in its own right. It was also that science in theory – science in the laboratory – may not work out in the field – in practice. And if it did not work in the field, then it was not much use!

At first sight, it is not straightforward to grasp why John Hammond is considered to have been such a force in Animal Science in general and in the British Society of Animal Science in particular (which honours him twice yearly through the *Hammond Award* (for research excellence) and the *Hammond Lecture* (the leading invited lecture at the Winter Meetings). The first Hammond lecture was given by one of his students, C.P. McMeekan, in 1969, *Science and world animal production*. Hammond rarely published in BSAP's Journal, **ANIMAL PRODUCTION**, preferring his own home journal,

The *Journal of Agricultural Science (Cambridge)*. His importance must surely be in his all-pervading influence on a very broad range of the animal sciences and animal scientists. He was also an ardent mingler – equally as ready to natter with scientists at conferences, with farmers at markets, or students in the laboratories. All his life he remained a hands-on researcher; ready to pick up a dissecting knife when the need arose. Hammond was never a professor, never a head of an academic school, never a research institute director. Hammond did experiments, worked with colleagues, encouraged post-graduate students, and got out into the world of practical animal farming.

Hammond arrived on the experimental scene at Cambridge at the right time. There was interest in growth and reproduction, but quantitatively very little understood. Hammond's incisive mind meant that he would design critical experiments and make the data talk to reveal the fundamental physiological truths of fertility (and its failure) and of growth (and its retardation through nutritional inadequacy). Those who he influenced when they worked with him at Cambridge are scattered throughout the life of BSAS.

### **M.M. Cooper**

Mac Cooper (29th President) made his mark upon Animal Science not only through the application of his own wide-ranging portfolio of research, but through the persons that he appointed and encouraged, and the students that he nurtured at the Universities of Wye and of Newcastle-upon-Tyne.

Malcolm McGregor Cooper was born in New Zealand from a Scottish immigrant family (whilst at Oxford he played rugby for the Scottish National team). Bright at school (unlike his contemporary in BSAP affairs, and fellow agricultural revolutionary, Kenneth Blaxter), he studied at Massey Agricultural College (under C.P. McMeekan) from where he won, in 1934, a Rhodes Scholarship to take an agricultural post-graduate degree at Oxford. It is not apparent that Mac Cooper either enjoyed, or got much academic (or agricultural) benefit from his three years at Oxford. He however passed his graduate exams, failed to submit his doctorate, and played a lot of Rugby. His final report from Oxford seems to say that Mac Cooper was a good bloke of forceful character who would go far (in his own country of New Zealand, that is), but was "not naturally a very clever man".

Cooper went back to New Zealand to a post in the Department of Scientific and Industrial Research (DSIR) in Wellington. Mac Cooper did not much like his job, returning to Massey to teach and research. In 1943 he took leave of Massey to go to Egypt as part of the NZ Expeditionary force. Nineteen-forty-six finds Mac Cooper returned to Massey as Head of Dairy Husbandry. There was no Professorship there for him. Scott-Watson, Professor Rural Economy at Oxford thought that the new post of Professor of Agriculture at Wye (now part of University of London, having transmogrified from the South East Agricultural College) might be appropriate and fitting for both parties.

Professor M.M. Cooper took up his post in 1947. He insisted, as had Ewart, in teaching theory on the back of practice. The farms at Wye were the perfect medium. He was impatient and unsympathetic to Britain's farming ways which he saw as "Going off at half-cock". He wanted to see in practice all the available technologies; he espoused the very same philosophy of 'science applied in the service of agriculture' as did the founders of BSAP.

When Mac Cooper took the job of (permanent) Dean of the Faculty of Agriculture at King's College (in 1954) he would be master of his, and his faculty's, destiny. He would have 1300 acres at Nafferton and Cockle Park under his direct control and by the time he was through, separate Departments for *every* branch of agricultural science.

Professor Wheldon (his predecessor) had let things rather lapse at Newcastle. When Mac Cooper arrived, there was little research going on. Not much decent farming either; it had neither inspiration nor utility. Cooper found that the Faculty of Agriculture at King's College was, like its teaching and research programmes, in a dissolute mess. Charles Bosanquet (Vice-Chancellor), made his contribution to animal science, first by appointing Mac Cooper to his post, next by funding the construction of the much needed new research facilities, and third by moving agriculture out of its archaic (but beautiful) quarters in the Old Quad and into a brand-new eight-story glass slab monstrosity with green windows, but which held everybody together. Bosanquet gave his unstinting support of Mac Cooper. Mac Cooper had, by good fortune, fallen on his feet in exactly the right place at exactly the right time - which was typical of that age. In the 1950s agriculture was in receipt of substantial State supports, at both academic and industrial levels. It was a good time to be of pioneering spirit – a good time for a British Society of Animal Science to be launched.

David Armstrong (first BSAP Hammond award winner) was a natural appointment for Mac Cooper to make to lead the Faculty's Animal Biochemistry and Nutrition research. In no case did Mac Cooper appoint 'teachers' to lecture to his students. He insisted that University students should get their learning from those who knew about their subjects by their own first-hand experience of research and production. David Armstrong was the perfect example. Never a natural teacher, he excited his classes with tales of his exotic research. He led a post-graduate school which came to populate academic and industrial establishments with the next generation of quantitative nutritionists (such as John McCrea (Rowett, 62nd President), David Beever (Professor of Animal Science at Reading and first Director of the Centre for Dairy Research (CEDAR), Colin Whittemore (Professor of Agriculture at University of Edinburgh and 55th BSAS President). Armstrong

had come from The Hannah when Blaxter moved to head up the Rowett Research Institute. Armstrong and Blaxter it was who had begun to break open the complex biochemistry of rumen nutrient utilisation. Their work would underpin cattle and sheep nutrition (still does). The experimental sheep in the basement of Mac Cooper's new building were a legend in their own time at Newcastle. That fact – that there was live acute experimentation going on in the same building as the lecture halls and offices – said everything about Mac Cooper's approach to his vocation.

Cooper dedicated Cockle Park Farm to research. He appointed a statistician to design and analyse Cockle Park's experiments, and then also Maurice Bichard (46th President), a quantitative geneticist with a love for mathematics of the Edinburgh (Douglas Falconer) variety. Maurice was allowed to combine University work with that of acting as a Consultant for The Pig Improvement Company, who he subsequently joined full time. Through Bichard, PIC became the largest pig breeding company the world has known, and through PIC the globe became populated with British-bred hybrid pigs.

Bill Smith, from the West of Scotland, had gone to Massey for a Post-grad year and was summoned by Mac to come back, do a part-time PhD, and join the staff as the lecturer in pig husbandry and manager of the pig research facility. Bill Smith was responsible for a large and influential national pig improvement programme. Bill managed his pig unit 'hands-on'. His willingness to 'pitch in' endeared him to the staff – even though his experimental programmes were most inconvenient. Bill Smith was a perfectionist, writing the most exact papers in the most economical of prose. His presentations to BSAP Winter Meetings were a master-class in the art. Simple, straightforward, rehearsed, intelligible, timed to be minute-perfect, and delivered in a slow loud clear Scots Ayrshire brogue projected to the last row of the audience.

Murray Black (BSAP's most faithful of servants) came as 'Assistant Farm Manager' to Cockle Park, but was actually employed to deliver into reality Mac Cooper and R.J. Thomas's programmes on clean-grazing, parasite control, and pasture management.

John Prescott (45th President) was appointed from Nottingham to cover the Dairy and Beef sides. Whilst at Newcastle, Prescott was involved with innovating cereal beef production, eighteen-month finishing, bull (and bred-heifer) beef. After a spell seconded to Argentina, Prescott went to Edinburgh where he headed up the East of Scotland College of Agriculture Animal Production Group before following Frank Elsley as Professor of Animal Production in the University of Edinburgh. Subsequently he was appointed Director of the Grassland Research Institute (GRI, Hurley), and finally ended up as Principal at Wye.

Mac Cooper made Newcastle pre-eminent. The place to go; transformed from laggard into leader. The beneficiaries were his staff, his students (including, John Craven (42nd President), David Leaver (53rd), Jeff Wood (57th), and very many others, and indeed the undergraduates who benefitted not just from the privilege of learning from a research-active and enthusiastic staff, but also from Mac's (note-less) lectures themselves. It was a given that Mac, his staff, and his postgraduate students would be BSAP members attending, and giving papers at, the BSAP Winter Meeting.

What must have been obvious (and frustrating) to Mac Cooper was that all the research being presented at the BSAP Winter Meetings and in the journal **ANIMAL PRODUCTION** was not being well enough applied in the UK livestock industry to the benefit of food production (viz Hammond!). The transfer of relevant research and development work into industry use was, to his mind, woefully ineffective.

Mac Cooper was elected President of BSAP for the 1972/73 year. He left Newcastle late in 1971 to work for the World Bank in Spain. He was an absentee President, much to the huge disappointment of all his very many disciples and admirers who had hoped that he would prepare the British Society of Animal Production for the last quarter of the century much as he had so admirably done for the University of Newcastle and UK Livestock Industry. He got back from his Spanish misadventure rather earlier than expected in 1975. Yesterday's man, he disappeared from the UK Animal scene.

### **Stephen Watson's legacy – The Edinburgh School of Agriculture**

Edinburgh University established its Professorship in Agriculture (Britain's first) in 1790 (A chair subsequently held by BSAP's 3rd, 34th and 55th Presidents).

Robert Wallace came to the post in 1885 and was there till 1922. He created The Edinburgh School of Rural Economy where 'University' and 'College' level courses were provided in the same place by a combined staff. Robert Wallace served as both Professor of Agriculture and Rural Economy, and Principal of the East of Scotland College. He had two funding streams and two political networks; University and Government. This made Wallace both powerful and influential in the Edinburgh milieu. Why this mattered to BSAP was because half of the Special Committee which delivered genetics research and development to Edinburgh, and from which sprung the creation of BSAP, comprised Wallace's Organisations. It would be difficult to deny Wallace's influence in Animal Breeding affairs at Edinburgh.

The 1920s saw a division of Wallace's integrated empire with J.A. Scott Watson appointed to the University Professorship, while Ernest Shearer was brought to the post of College Principal. Scott Watson went on to the Sibthorpe Professorship at Oxford (1925-1944). In his Presidential year at BSAP he had been appointed Head of the Ministry's National Agricultural Advisory services. Scott Watson's academic background at Edinburgh and Oxford framed the ethos of the Advisory Services in presenting their advice on the back of evidence and the realistic demonstration of research into applied practice at farm level. NAAS was not just to be involved in passing on best farming practice, it was to be itself an initiator and driver of innovative change. As such, the Members of NAAS and its successor the Agricultural Development and Advisory Service (ADAS), together with these organisation's numerous and generously endowed Experimental Husbandry Farms, were natural members of BSAP. The Ministry-backed advisory organisations had substantial input into the society's development in its first fifty years.

With Scott Watson's departure, Shearer added the mantle of the Professorship to his post of Principal, and the organisations were once more combined under one physical and administrative structure, but with (the magical) two funding streams (University and Department of Agriculture for Scotland). This was what Stephen Watson inherited in 1944.

Stephen J. Watson had joined the staff at Imperial Chemical Industries's Jealott's Hill Research Station in 1927, rising to Head of Animal Nutrition and Research. At Edinburgh, his contribution to Animal Science was through the changes and expansions he achieved in infrastructure which allowed a vibrant animal research environment, and through his unstinting encouragement of his young staff. Stephen Watson's crowning glory was to have built for his new and greatly expanded School of Agriculture a single dedicated building on the University Science Campus at The King's buildings – close by The Institute of Genetics, The Animal Breeding Research Organisation, The Poultry Research Centre, and the Department of Forestry and Natural Resources. Stephen Watson guided the hands of the architects at every office, laboratory, engineering space, veterinary post-mortem room, canteen, lecture hall, seminar room, library, greenhouse, stair, door and architrave. It was to be *his* building. It was opened in 1960. It is not evident why Watson's triumph should now function under the name of 'The Peter Wilson' building. I am sure it would not have been Peter's choice.

Stephen Watson cemented the University Department of Agriculture and the East of Scotland College of Agriculture into *The Edinburgh School of Agriculture*. He began the drive that would place applied research at the core of both student teaching and county advisory work. He was happy to see University or College staff doing either or all of the three functions, distributing tasks according to individual talent rather than structures. Amongst others, Stephen Watson appointed to his team J.M.M. (Ian) Cunningham. Ian established the experimental sheep flocks and the pig research unit at Boghall and Easter Howgate, before being promoted to head up the Hill Farming Research Organisation and then becoming Principal of the West of Scotland Agricultural College. He was BSAP's 35th President. Around the same time, Watson appointed K.V. Runcie (who managed the herd for dairy research on the University's farm at Langhill in 1953), and of course, McDonald, Edwards and Greenhalgh (54th President).

Stephen Watson it was who, with J.A. More, established at the Bush Estates a Centre of European Livestock research of unparalleled excellence. The University Department of Agriculture and the College of Agriculture would share the Bush with all the other agriculturally related organisations at Edinburgh, including (of interest to BSAP), ABRO (Roslin), the Poultry Research Centre (PRC), The Royal (Dick) Veterinary School, The Moredun (Animal Diseases Research Association), and the Hill Farming Research Organisation (HFRO), under the title *The Edinburgh Centre of Rural Economy*. Sadly, Bush House, a magnificent and dignified edifice and grounds at the centre of the Estate, was, on Peter Wilson's and Quintin Brown's watch, sold-off in a moment of utter madness.

By his facilitation of the research and development work of so many animal science organisations at Edinburgh, it is impossible to overestimate Watson's and More's contribution to British Livestock science and to BSAP/BSAS. The number of Presidents, Committee members, Hammond Prize winners, servants of the Society and givers of papers – plenary, ordinary and short – that have emanated from the Edinburgh School of Agriculture and the other institutions of the Edinburgh Centre at Bush and Roslin defies any attempt at their counting. Sir Stephen Watson retired from Edinburgh early in 1969, to be succeeded by Noel Robertson. Noel, the nicest of men, but being a plant pathologist had no particular understanding of animals. He did however see, correctly, that a Professorship in Animal Production would sort that nicely. He appointed Frank Elsley, who had done his post-graduate work at Leeds, and then gone with Vernon Fowler to the Rowett to work under Kenneth Blaxter. Unfortunately for Noel, Ian Cunningham (sheep and pigs) was in line for the Director of The Hill Farming Research Organisation, and Ken Runcie (dairy and beef) was moved to head the new Advisory and Development Department. Noel sought the advice of the best known agriculturalist around, Professor Malcolm McGregor Cooper next door at Newcastle upon Tyne. Charlie Hinks, one of John Prescott's PhD students, was dispatched north to cover for beef, while Colin Whittemore arrived in Edinburgh simultaneously with Frank Elsley. Noel Robertson gave them both their heads. The same year Murray Black (BSAS Secretary / Treasurer 1981-2000, 52nd President), Mac Cooper's assistant at Cockle Park, came back from managing the An Foras Taluntais experimental farms in Ireland to be Farm's Director with overall responsibilities at Bush for both commercial and field research operations.

Noel Robertson retired in 1984 and Peter Wilson, following his spell at Unilever's Colworth House, was invited to the last shared appointment of Professor and Principal, and while in that post he oversaw the dissolution of The Edinburgh School of Agriculture.

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Pioneers have, by definition, a blank canvass upon which to paint. BSAP was a pioneering organisation. The mid 1900s were a time of demand for food and a time of developing technologies to provide it – the need and the means. The second Agricultural revolution was about to happen and the pioneers rode that wave. Above all there was both will and money coming from Government.

That it was relatively easy for Hammond and the Edinburgh and Cambridge communities to launch BSAP in 1944 does not detract from the credit due to them for seeing and seizing the opportunity. Mac Cooper had funds at his disposal to deliver a wake-up call to Britain's livestock farmers and grazers, but he used them wisely and sent out from Newcastle a generation of science excellence; as did White, Hugh Donald, Stephen Watson and Noel Robertson from Edinburgh.

## 2. Winter Meetings: Proceedings of the British Society of Animal Production (1944-95) and the British Society of Animal Science (1996-2019)

In the minds of many members of BSAP (and BSAS) the work and worth of the Society lies in its organisation of scientific and technological meetings. By far the most important of these was (is) the Winter Meeting (now, Annual Meeting) at which the animal science of the day is exchanged amongst the Society's members. These meetings are reported in the Society's 'Proceedings'. The **Proceedings** are a bellwether for what the BSAP and BSAS has mostly done over its first 75 years. This is therefore the most substantive chapter in the story of BSAS.

In 1939, a European Association of Animal Breeding (sic) was proposed in Zurich. The timing was not auspicious. Later that year John Hammond was way-laid at a genetics conference in Edinburgh by J.E. Nichols (then at the Institute of Genetics). It was highly likely that what was originally in the minds of Nichols and Hammond was a *British Society of Animal Breeding*; following the planned European model. This indeed was well reflected in the predominance of breeding topics in the early years. Also germane are the implications: Breeding (not genetics), Production (not science) – *The Society was to be about Applications*. Nichols persuaded Hammond of the notion that there should be a British Society comprising about one third University and Research Institute researchers and teachers, one third ministry and trade advisors and consultants, and one third farmers. The idea was kept warm through the war until 1944 by J.E. Nichols, J. Hammond, R.G. White, H.R. Davidson, W.C. Miller and E.C.J. Allday. In 1943 it was Nichols (now looking after the Imperial Bureau of Animal Breeding and Genetics at The King's Buildings, Edinburgh), who put his shoulder to the wheel by setting up the first meeting in London and sending invitations to all those he thought fit to attend.

The Inaugural meeting of the British Society of Animal Production was held on 6th January, 1944 at The London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, with Dr John Hammond FRS in the chair. John Hammond, invariably lauded as the Society's first President was not in fact so. He was the Chairman of the first meeting. He only became named as President retrospectively after he had stood down from the Chair and White was elected the second President under the constitution which was implemented that year. There were present at Keppel Street eighty-seven individuals who were duly accorded membership of the British Society of Animal Production. (i.e. they were the founding members). The meeting discussed '*Cattle Breeding Policies*'. The intent is clear. BSAP is about taking the best of current science and placing it into the context of application to improve productivity.

Later that same year the Society met again at The London School of Hygiene and Tropical Medicine on 24th and 25th October in a joint meeting with the Institute for the Study of Animal Behaviour. This second meeting continued the theme of '*Science in the service of production*' with papers from White, Hammond, Wallace and Edwards. There is a strong element of the need to bring together academe with the ways and needs of the farming community, and to understand how 'animal behaviour' relates to farm-level 'animal husbandry'.

By the end of the first year it was evident that the meetings of the society were (a) addressed by the leading luminaries of the day, (b) were popular and well attended, and (c) were generating information of such quality that it was deserving of wider dissemination. Further, now that the Society was extant, it would need to have its scientific activities formally recorded in the form of a publication – A '*Report of Proceedings*'. Thus began '**Proceedings of the British Society of Animal Production**'.

The **Proceedings** from 1944 through 1958 are held in five volumes, each of 100-150 pages packed with learned and lengthy expositions; worthy even yet of a reader's consideration.

The third meeting was on 21st February 1945 addressing the general topic of '*Meat*'. The Society now has a named 'Vice-President' who will succeed to the Chair. Thus is born the annuality of the Presidency. The fourth meeting was in the summer of 1945, with the 'General Topic' of '*British Pig Production*'. Unlike the first three meetings, this was at the University of Reading. In the afternoon, members are treated to a *Visit to the National Institute for Research in Dairying*, where they will doubtless have been entertained by Phil (Raphael) Braude, whose *forte* was investigating best practices for feeding pigs.

The Society is beginning to gain confidence in itself and spread its wings. The fifth meeting (February 1946), has an extended format. On the first day, '*Breeding methods in livestock improvement*', and on the second '*Artificial Insemination*'. The extensive papers presented are published in full in the **Proceedings** and are from six to twenty-six pages in length. The published proceedings are effectively the transactions of a learned society and comprise research reports in their own right. The **Proceedings of The British Society of Animal Production** had now become a *bona fide* medium for the publication of science.

The Summer Meeting of August 1946 deals with *'The collection, interpretation and use of milk and butterfat records'*. The Winter Meeting of 1947 quite specifically deals with the *'Genetics of inbreeding'*, while there is also arranged a Summer Meeting which this time is held jointly with the British Grassland Society at Aberystwyth and focusses on *'Improvement of hill grasslands'*. The theme of *'Animals and grass'* (with a paper from S.J. Watson) continues in the 1948 Winter Meeting.

By 1950, the BSAP has settled into something of a routine. The Winter Meetings tend to be 'indoors events' for the exchanging of new science amongst research workers & teachers, and exploring the means whereby animal science can be usefully applied to the benefit of livestock farmers. The audiences are mixed research workers and leading farmers. The Summer Meetings reverse this exchange as the members go 'outdoors' to visit and learn directly of farming's leading practices.

It has come to be realised that the published proceedings of the Society have a value in their own right to exchange knowledge widely amongst both the scientific and the farming communities. The **Proceedings of the British Society of Animal Production** (1950) has an Editor (I.L. Mason, Institute of Animal Genetics Edinburgh) and will be published formally annually.

Up to now, it has to be said, the subject of Animal Production at the scientific level (*'finding new knowledge by unbiased analysis of objective observation'*) has been frequently interpreted as either animal improvement by the application of genetics, or as reproductive biology. At the technological level (*'using scientific evidence in the real world'*) the subject of animal production has largely been dealt with by descriptions of how recent advances in animal science research will, or already have, resulted in successful innovative farming systems. Surprisingly, so far there has been little on animal nutrition, despite the presences of Woodman and Evans, and the HMSO publication for MAFF in 1948 of the groundbreaking and hugely influential "Rations for Livestock". At this point in BSAP history 'Industry' is Primary Agriculture. The Allied Trades – i.e. the animal feed and health industries – have not yet been given a voice.

It is evident that in the early years *all* the 'scientific papers' are 'invited plenary contributions' from the top experts in the field – the University Professors, the heads of research teams, leading farmers. Equally significant is that these papers are formally opened for substantive discussion *amongst* the members in the audience. The discussion was as important as the paper, and elements of the papers were specifically intended to generate audience participation. There is no doubt that those taking the platform are those that are at the top of their respective game. The line-up for the 1953 meetings, for example, included; Alan Robertson, Geoffrey Sykes, J.W.B. King, I.A.M. Lucas, K.L. Blaxter, D.S. Soutar, H.P. Donald, W.P. Blount, J.P. Maule, H.R. Davidson, I.L. Mason. These, in modern parlance, were the giants of their day.

The practice of *all* papers being invited was relaxed after 1953 when the first day of Conference tended to be invited papers on a specific topic (as before), but the second day allowed for shorter volunteered papers. This was a *seminal* change in the Society's affairs. The pattern continued through to 1965.

By 1954 Gerald Wiener had joined Ian Mason as editor of the **Proceedings**. There were sixteen papers dealing with animal production systems, feeding pigs, and, of course, animal breed improvement. The content is something of a mixed bag, which has clearly defeated the editors who were unable to find any suitable general title for the meeting. The **Proceedings** would be entitled merely *'Papers on Animal Production'*. The 1955 **Proceedings** likewise included a catholic mix of papers across the range of animal science disciplines.

The *raison d'être* for the Winter Meeting was evolving. *Previously* the Executive Committee would identify a subject area (usually an animal production problem with an emerging animal science solution) that it would be timeous to have dealt with, and would then invite the notables of the day to deliver invited review papers. *Now* the Executive would come forward with topics not which so much fitted into a particular subject area, but rather which were scientifically *à la mode* – and invite the research leader to tell the members all about it. But importantly, at the same time, it was apparent that exciting research might perhaps be best presented by members of research teams (the 'lower orders') who were actually doing it. Two elements however remained firmly in place; (i) however exciting the research was, it had to be that which addressed industry production problems and (ii) the speakers were to be established experts in the field who could speak with authority. So it was that those with something to say would volunteer their services and come forward to the Winter Meeting to explain what they had done, share their ideas, open up their work for criticism by their peers and discuss with members the best directions for future work. And maybe also forward their findings for transfer into productive use within the industry.

By 1956 the (new) pattern of an eclectic mix of offered (rather than invited) papers at the Winter Meeting seems now to be set. One also begins to feel that something of the proselytising pioneering spirit of the original meetings has been replaced by exchange of scientific information amongst peers. The **Proceedings** now begin to have all the appearance of a learned journal, with the papers presented as research reports in the classic (and still used) form that would have a ring familiar to today's conference-goer, and quite different to that of the 1940s.

In 1959, the **Proceedings** of the Society's scientific meetings were no longer published separately as an independent record. In truth, the Winter Meeting had changed so much in its content and approach that the **Proceedings**, formerly containing erudite reviews, now incorporated matter more akin to a scientific research paper's abstract.

The proceedings had completed their evolution into medium for experimental reports.

At this point it had become apparent to Gerald Wiener that the material being published should be properly and more fully recounted through the medium of a proper 'Journal'. He took the idea to J.P. Maule (BSAP Secretary and prime-mover, whose office was next door in the Edinburgh building), who agreed readily, having already also noted that the enthusiasm of the research community for publishing papers exceeded that which could be presented at the Winter Meeting (and thereby published in the **BSAP Proceedings**).

No sooner therefore had the **Proceedings** become a recognised journal than it would be eclipsed! In 1958 BSAP laid its plans to launch the dedicated journal **ANIMAL PRODUCTION**. This journal, like its sister '*The American Journal of Animal Production*' would receive papers from the science community at large, would be independently refereed by peers, and which would be published to an international readership. The exercise would be wholly completed through the written word – no platform delivery or conference intercourse would be involved. The first issue of the journal **ANIMAL PRODUCTION**, containing papers written especially for it, appears in 1959.

Given the existence of the journal, there was now no need for the Winter Meeting to have its proceedings separately published. Thus, at the very moment of their zenith, the **Proceedings of the British Society of Animal Production** ceased. What had been the Society's iconic and sole statement of its existence as a gathering of scientists and technologists to exchange knowledge was (for the time being) suspended.

The presence of the Journal **ANIMAL PRODUCTION** had a dramatic effect upon the purpose and focus of the Winter Meeting. Results (and methodologies) of finished research programmes could be published in full in the Journal, together with a 'discussion' of the results made by the authors themselves. The 'finished article', as it were, was destined for the Journal. The Winter Meeting therefore could be a place for interim results from work in progress presented from the platform in shorter form.

All these things being so, the logical place for the publication of the abstracts of papers presented to the Winter Meeting (and of the Summer Meeting), was in the form of a few more pages added to the back of **ANIMAL PRODUCTION**, under the heading "**Proceedings of the nth meeting of the British Society of Animal Production ... Titles and Abstracts of papers presented.**" BSAP now had all its scientific activities (the journal and the reports of its two meetings every year) in one publication. A publication that the Society wholly owned, edited, published (with Oliver & Boyd), had printed and distributed.

The 1959 Winter Meeting started with a wide-ranging symposium '*Recent developments in Sheep Production*', comprising invited papers and erudite discussions. This was followed with a mixed bag of a score or so of '*Other papers on current research*'; one of which showed 'coloured slides'! These latter papers appear to have all been 'submitted' (rather than invited). The same pattern was used in the following year; a substantial symposium on '*Crossbreeding*', and a dozen papers of '*Current research*'.

The Society enters the sixties with a mixed mind as to what it is about. There are still a good number of 'farmer-relevant' papers being invited, but the balance is clearly shifting to the reporting of more reductionist, discipline-related, experimentation. There is movement toward interim reporting of on-going investigations; rather than of finished work ready for application.

It is not clear if the speakers on the platforms see themselves as talking to each other (as in a workshop), or to an audience expected to put what they are hearing to good use in farming applications, advisory messages, or teaching. This matter was germane as in England the sixties had seen the (misplaced) separation of the presumed purposes of the ARC Research Institutes (ground-breaking research), the Universities (teaching), and the Ministry-backed advisory services (instructional advice). Were the Winter Meetings to exchange ideas about science in progress or to transfer wrapped-up technological information? Even if there were any such discussions in the BSAP Executive, no clear policy was emerging. The membership however *was* changing. It was the membership, by their actions rather than their words, who were driving the agenda.

The BSAP home journal **ANIMAL PRODUCTION** had become, almost instantaneously, *the* premium English language medium for the international publication of peer-reviewed animal production and animal science research and development. Second only to the much larger (and more grandly supported) *American Journal of Animal Science* – the organ of the American Society of Animal Science. No sooner had the **Proceedings** been strapped into the back of the

Journal, than their incongruity in that place became apparent. The presence of the reports of titles and abstracts at the Winter and Summer Meetings as an integral part of that prestigious publication, **ANIMAL PRODUCTION**, was an anachronism – an embarrassment even. The texts of the abstracts lacked precision and discipline, whilst the investigations described (and the conclusions reached) could be short on experimental rigour. Animal Production papers and Proceedings papers were different in both kind and quality!

Over the next few years a number of measures were put into place to address these issues. First, full and complete abstracts, following a professional pattern of content would need to be submitted before any paper was included in the Annual Conference programme. These would be ‘reviewed’ (gently) by chosen BSAP committee members. This substantially improved the quality of papers submitted to Winter Meetings, but also favoured the reporting of neat, small-scale experiments – the all-embracing thinking review not fitting comfortably into the format.

Through the sixties the numbers of papers volunteered was so great that the invited papers addressing specific topics were largely dropped. The volunteered papers tended to be short (fifteen plus five minutes for discussion), technical, and with their discussion focused on scientific niceties (which might have had much to do with farmer membership now being in steep decline).

At the Winter Meeting of 1962, in Edinburgh, after a couple of review papers, the delegates get an intense diet of nearly fifty *current research reports* on just about every conceivable aspect of animal production research; each with a 250 word data-packed abstract. As usual however, animal breeding and genetics are the dominant contributors, but there is now a greater number of nutrition papers coming forward, reflecting the growing concern of the community (not least at the Rowett) with the nutritional requirements of farm livestock.

The 1963 Winter Meeting in London continues the pattern of Symposium (*Growth & Development*), and then a plethora of reports of on-going research. The presenters, it can be noted are invariably the project leaders themselves. The audience therefore (mostly of researchers, teachers, and the knowledge transfer agencies) would be getting the benefits of hearing from (and questioning and discussing with) the leaders in the field. Standing on the platform that year were, amongst other notables, Eric Lamming, Malcolm Castle, Reg Preston, Kenneth Blaxter, John King, Bob Orskov, Vernon Fowler, Arthur Jones, Lawrence Mount, Geoff Lodge. It would have been a memorable meeting.

Meanwhile, a new format for the Summer Meetings was emerging. Originally the Summer Meetings were concerned with visits to farms and R&D establishments, with a low level of ‘explanatory’ papers. As time went by, the visits to farms were reduced, while those to research establishments gained in prevalence. At the same time the number of presented papers to the summer delegates increased; some reviewing the state of science and its rate of application (much as the Winter Meetings of the early years). The Summer Meetings had been the strongest of the Society’s links with real life in the agricultural industry. They were attended by men from Whitehall, farmers, the feed industries, the advisory services, research workers, and academics. They were however heavy on organisational resources and upon attendees’ time, and it was the Winter Meetings that were the more popular and well-attended.

The two-day Winter Meetings became evermore frenetically crammed with scientific exchange. For two more years the conference continued to be started off with a leading symposium (1964, London, ‘*Education*’; 1965, Harrogate, ‘*Research into practice*’). But then this format seems to have been dropped. The reason for this is not clear, as these symposia dealt with current topics of import and delivered a state-of-the-art review from those best placed to be authoritative upon their subjects. They were an opportunity for a holistic approach (largely lost in the ‘*Reports of current experiments*’, which comprised the rest of the programme).

For the meetings of 1966 through to 1971 there were forty to fifty ‘*Papers on current research*’ with comprehensible abstracts. The Winter Meetings became so busy with presented papers that the 20 minute time slot became the norm and from 1962 parallel sessions had become necessary. At the beginning of the sixties, Animal Breeding and Genetics, and Animal Feeding and Nutrition are (about equally) the most frequently occurring subjects. These were, of course, areas where (a) funding was forthcoming and (b) experimentation was relatively well facilitated. Animal management was proving rather intractable to both fund and report in coherent and objective (scientific) ways. This latter was also associated with (caused) a widening of the gap between the experimental scientists and the practical agricultural community. Nonetheless, attendances at the Winter Meeting increased steadily through the sixties; in 1968 the Harrogate meeting attracted 400 delegates.

The 1970s brought a new generation of research workers into the Universities and Research Institutes who are no longer driven by a need to see their work applied to the feeding of a hungry Europe. This generation is driven by a fascination for the science itself – responsibility for the applications can be looked after by someone else. Animal Production scientists and technologists are moving ever further away from market. Papers dealing with animal breeding plans are now being joined by papers seeking a more fundamental understanding of mathematical and cellular genetics. Papers on feeding regimes are joined by papers on nutrients and metabolic processes.

Whilst the Society itself might bear a responsibility to ensure a coming together of the professional scientist with the professional knowledge transfer agent (not least at the Winter Meeting and at workshops), the membership (whilst warm on words) seems not to have had the appetite to deliver that part of the Society's remit. Have the Society's members begun to be more inward-looking in their approach? Are the members now talking amongst themselves more than they are talking to their 'customers'? This need not necessarily be a bad thing for Animal Production Science, because progress demands understating. Simple measurement of what is happening is not enough. However, this paradigm shift requires also that Middleton's far sightedness is heeded. Innovations in breeding, feeding and managing livestock at agricultural industry level require linkages between research worker and farmer – the pattern so exemplified by the likes of Hammond, Mac Cooper, R.G. White, Woodman and Evans. With the shift in scientist attitude, there is a greater than ever need for advisers and developers. Those who can first understand the scientists (which the farmers cannot, or do not have time), and then translate the findings of science into usable technologies.

Fortunately for the UK farming industry, which was to lead the world in livestock technology through the sixties, seventies and eighties, the Technology Transfer industry was alive and well and in large number in the BSAP conference audiences; scribbling notes, asking questions, often remonstrating. The Marketing and Development Boards, and the advisory services of both government and industry, all attended the Winter Meetings avidly. In truth, only with their presence could the BSAP fulfill its constitution's promises.

Unfortunately, as will be seen, this happy position was not to continue.

At the beginning of the 1970 Winter Meeting, the Society is formally addressed by its President, K.L. Blaxter, Director of the Rowett Research Institute. He offers thoughts that the (1100 member) Society might do well to ponder upon. Here are some of them. Blaxter notes the extending gap between BSAP members and the farming industry. He fears that BSAP would become "simply another scientific society". He asks if **ANIMAL PRODUCTION** is to become more scientific, should BSAP launch a Development journal? Blaxter warns that the heady environment of ample funding that characterised the post-war hunger years would not last into the second twenty-five years of the Society's life which would be characterised not by food shortage, but by its over-production. He raises (in 1970) the upcoming problem of a population of obese people. Blaxter regrets the increasing 'specialisation' of the Winter Meeting, seeking the use of the forum to consider the 'wider whole'. He regrets the emphasis on "communication of short-term research findings to the exclusion of integrative accounts of where those research findings lead". Blaxter suggests that Society funds could be used for "integrating reports". In the political dimension, Blaxter wishes the Society to place itself in the same position as the British Veterinary and British Medical Associations (BVA and the BMA); professional organisations representing their members and whose opinions are sought by, and provided to, policy-makers and the public.

The Society *does* divide its journal, but not in the way Blaxter suggested. **ANIMAL PRODUCTION** had become a leading international science publication and wanted to stay that way. Peer reviewing for what was or was not publishable at such a level had to be rigorous, with a high level of rejection. Standards of experimental design, analysis and reporting veracity had to be of the highest. Such demands, appropriate to the final publication of research and investigations in the Journal, were not appropriate to the **Proceedings** of the Winter Meeting, which reported current research 'in progress'. Here, a more lax approach was appropriate to the production of the abstract / summary. Yet, in the Journal, both were still to be found under the same cover and editorship (even though the matter had been argued about over the previous decade). This state of affairs was not fitting for **ANIMAL PRODUCTION's** ambitions. There was a self-evident case for a separate publication for abstracts and symposia. Further, there was the danger of confusion amongst readers with regard to credibility and authority; the **Proceedings** abstracts having a much lower score in these respects than the Journal. What had been seen as an obvious step in 1958 was in 1971 hampering the Journal's progress.

Finally, in 1972 the matter is resolved by the creation of a completely separate publication, **Proceedings of the British Society of Animal Production**. In the first publication, we see a return to earlier years with special symposia entitled '*Artificial rearing of pigs*', '*Processing of roughages*', '*Animal production from grassland*', '*Aspects of carcass evaluation*', Review papers are prepared by the leading exponents and reported *in full*, with references. They were (still are) of immense value. In the same publication are the abstracts of the '*Papers on current research*', now called '*Short papers*'. There are 54 of these, each with 250-word precision abstracts.

The report of the (3-day) 1974 Winter Meeting includes the full text for the 1974 Hammond lecture and 64 abstracts. Nutrition dominates the agenda. Interestingly there was also a forum on '*Sow nutrition*', a hot and disputed topic at that time with active research at Nottingham, Edinburgh, Rowett, and ADAS EHF. The forum concluded "*No useful purpose would be served by collecting together a consensus view and publishing it as a set of BSAP standards*". This unbelievably disappointing conclusion would have infuriated Ken Blaxter, and is completely at odds with BSAP ethos.

1975 sees a text by H.P. Donald, recently retired from ABRO, given in full. He warns the Society of becoming introspective and of its science becoming self-serving. He urges not just a holistic approach to research (he would have

abhorred the presentations that would shortly follow his presentation), but a better understanding by BSAP's members of Animal Science's place in society at large.

P.D.P. Wood of the MMB edited and introduced a symposium in December 1975 that ended up as a one-off booklet *'Proceedings of a symposium on cattle experimentation'*. Apart from dealing with the eponymous subject-matter, both Wood and Clair Taylor (ABRO) share a moment of navel-gazing. Wood writes a foreword that suggests that an experimenter might have motives other than benefitting the farming industry; adding to the sum of knowledge, bringing greater good to mankind, etc. A PhD student, Wood suggests, might be most interested in just getting the degree. Wood talks of research workers as jockeys riding other people's hobby horses, or as seekers not after truth, but after fame (or even money). Wood implies that not just the experiment chosen, but also the analysis presented, might not reflect the highest of motives. These words are as vital to heed today as they were then.

Equally as remarkable is the paper from St C.S. Taylor...ever the thinker. He starts by pointing out that it is experimenters, not experiments, which have objectives, and then lists them. Paraphrasing, they are as follows; (i) the avoidance of inconvenient routines for technicians, (ii) peer esteem for the scientist, (iii) advancement of the commercial interests of the sponsor, (iv) advancement of personal career, (v) fitting within the confines of analytical and interpretive methods in which the experimenter is competent, (vi) reputation of the research organisation, (vii) keeping within budget, (viii) avoidance of 'outray' from sectors of the public, (ix) creation of profit for the end-user of the results, (x) reduction in costs of production ...

Clair Taylor went on to raise other issues of a more practical nature; (i) national scale experimentation to accommodate millions of animals, (ii) clearer definitions of experimental objectives, (iii) what to do with new information (enjoy intellectual pleasure, confirm the already known, reject that which is inconvenient, use for nefarious purposes, provide data for decision-makers), (iv) the need to decide what the experiment is testing – and thereby the choice of variables measured, (v) restriction of the ambition of information gainable within the defined (cost) limit of the facilities available (researchers asking questions of inadequately sized data sets), (vi) the essential nature of determining whether to do a comparative (difference) experiment, or a relationship (regression) experiment, (vii) the difference between the reliability of a result and its relevance (classically demonstrated in the 'significant correlation').

Between 1960 and 1990 some thirty to fifty percent of the total membership might expect to go to at least one BSAP meeting in the year. About half of these were the researchers – the seekers and deliverers of wisdom – and the other half were there to receive that wisdom. As things developed, year on year, some of the 'receivers' would become increasingly doubtful as to whether the 'wisdoms' being offered to them were relevant to their day-to-day activities, while some of the 'seekers and deliverers' became increasingly prone to use BSAP as a place for scientific exchange.

The demand for twenty-minute papers describing *'Current research in progress'* across a range of subjects in parallel sessions was getting ever greater. The issue was whether the attendees at the Winter Meeting were there for the symposia or for the reports of current research. The latter appeared to be winning the day.

Apart from providing a means to apply some degree of quality control and to organise the Winter programme into sensible sessions of related topics, the short (250-300 word) abstracts came to have little of worth after the Winter Meeting was concluded. They were insufficiently informative to either stand in their own right (the full paper would be out in **ANIMAL PRODUCTION** the following year anyway if it was any good) or help audiences to better understand the spoken presentation (by now all papers were accompanied by visual aids liberally endowed with tables and graphs). In 1975, Conference delegates were given a compendium of abstracts at Registration at the start of the meeting. But it seems that they were considered as ephemera, of no value to posterity, as there are none to be found in the archive. In 1975, after a short four-year life **Proc. Br. Soc. Anim. Prod.** had come to an end.

Through until the turn of the century there were no more properly published Proceedings, just a book of summaries – 'delegates for the use of.'

It has to be observed that over these same years, despite the dramatic increases in the numbers of people involved in Research and Development, and the vastly increased numbers of PhD students and Post-docs who would become members of BSAP/BSAS because of its function as a science forum, the total numbers of the BSAP/BSAS membership did *not* increase, *neither did the number of persons attending the Winter Conference*. The BSAP was becoming science dominated. Many 'industry and technology transfer' members were finding the reasons for their having become members of BSAP in the first place; (a) getting the journals **ANIMAL PRODUCTION** and the **Proceedings** (b) going to the Winter Meeting, were no longer relevant to their particular needs. The Journal was not anymore addressing industry problems in ways that industry could learn from it. It was addressing science. This was not surprising. There was no kudos (or advancement) for either Journal or research worker coming from the promulgation of 'Applications'. As to the Winter Meeting, many delegates found ever more papers addressing matters which were to them either unintelligible, irrelevant or both. The membership was losing its following of farmers, feed industry technologists, advisors, technology transfer specialists,

development workers. Many elements of the membership did not find this regrettable, nor did they see the consequences as in any way damaging to the Society's future in what was a changing world. A scan of the Presidents over the years will show that in the early years the Society was in the hands of those with direct interests in the farming industry – having a hands-on understanding of the issues. In the later years, the Presidents are invariably at least one step removed from the industry work-face.

In passing, it might be also noted that following the 1975 Summer Meeting in Bangor, no further Summer Meetings are reported. They too have been discontinued.

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The one-hundredth meeting of the BSAP was the Winter Meeting of 1990, held in Scarborough. There have been big changes since 1976. There are 65 'Theatre' presentations and over 100 'Posters'.

For the convenience of the delegates there is printed '**Programme and summaries**'. It is A4, 15mm thick. The *summaries* are no longer 250-word abstracts, they are 850 words (two sides of A4), they have an introduction, materials and methods, results and conclusion. They are clearly there to do more than inform the Programmes Committee of the likely content and standard of a submitted presentation. Nonetheless, the front cover of the **Programme and summaries** unequivocally states the following disclaimer: "*These summaries have been collected together as a service for conference delegates: They have not been checked or edited and the Society can accept no responsibility for their accuracy.*" There are no Editors named (compare the situation through till 1975).

The Poster, as a means of scientific communication, had been introduced a number of years earlier, and the medium was seen to be highly useful (a) to encourage delegates who cannot be given space to present their work in the main theatre sessions to nevertheless gain many of the benefits of attending BSAP, (b) to demonstrate legitimacy of attendance (particularly important for organisations which would only fund those who were on the programme as giving papers, and (c) as a medium through which PhD students could 'cut their teeth'.

In 1995, the British Society of Animal Production passed at its AGM a resolution to change the name of the Society to the British Society of Animal Science. This was not as revolutionary as it appears. It was an inevitable reflection of what had come to be the fact-of-the-matter. For good or ill, the primary focus of much (but by no means all) of the membership was no longer the 'production', but the 'science'. But if a name change does have inner meaning, then in this case it is that the discarding of the heritage of the Pioneers has been recognised. The future of the Society will be in its members' pursuit of scientific excellence. BSAS *is* 'simply another scientific society'.

Winter Meetings through to 1997 followed a similar format. The '*Programme and summaries*' being "a service for conference delegates" (As well, of course, as a medium through which submitted papers could be vetted by the Programmes Committee and the Conference Programme organised in a sensible way.) The appetite for symposia and plenary sessions has somewhat diminished. The summaries themselves are down to one side of A4, but still with the complete 'mini-paper' format. These abstracts are scientifically informative, but nonetheless, BSAS considers them trivia. The blunt health warning carried on the front page since the eighties is unambiguous; "*These summaries have been collected together as a service for Conference delegates; they have not been checked or edited and the Society can accept no responsibility for their accuracy. Please check with the author before using any of the information.*" Since the cessation of the **Proceedings** in 1975 there seems to have been over many years a schizophrenic approach to the summaries: Do they have merit in their own right, or not? If not, then are they not a little over-elaborate to be treated as discards? Two-hundred and fifty A4 pages of detailed scientific results are a most generous 'service' to conference delegates, many of whom would not ever read them.

The 'Winter' Meeting of 1997 has become the 'Annual' Meeting. The 200+ pages of *Summaries* have become (no less than) the re-incarnated **Proceedings of the British Society of Animal Science**; published by BSAS with an ISBN number. It has evidently been decided that the descriptions of experiments *are* good enough to be printed as a permanent record, but are not *bona fide* reference sources (the disclaimer is still there!). The increasingly scientific nature of the papers reflects what has been a steady trend since the early years of the society. Whereas fifty years earlier papers tended to be integrative, holistic and with a clear eye on agricultural applications, now the research seems more reductionist, smaller in scale, more focussed on matters of scientific interest. The title page of the **Proceedings** no longer states that their purpose is to be a 'service' to conference delegates, nor however does it state what the **Proceedings** *are* for. Presumably, given the ISBN, as a permanent record.

The Winter (Annual) Meeting programme of events is not described in the **Proceedings**. If there have been plenary sessions and/or symposia within the programme, it is not evident. All the reports are in the form of mini papers (introduction, materials and methods, results, conclusions). This formula follows through to 2000. There are in the year 2000 forty-four theatre presentations and one hundred and seven posters.

As to the **Proceedings** themselves, the constant chopping and changing seems to suggest that there is no policy focus. Prior to 1975 it was quite clear to everybody what the purpose of the **Proceedings** was. But for the next 25 years no clear reasoning has been apparent. That all this good material should be published in some form, rather than lost, seems agreed, but how, exactly, are either the end-user or the scientific community expected to employ this dense mass of information from which the society has so purposefully distanced itself?

In 2001 the Annual Meeting has symposia back on the programme. There are six invited theatre presentations; *Endocrine Disrupting Compounds*; *Future Directions for the Livestock Industry*; *The Science of Meat and Milk Quality*; *Tropical Animal Production*; *Ethical Issues in Animal Science*; *Improving Beef Production Systems*. What is more, these wide-ranging review papers are printed in the **Proceedings**. There is no reason to doubt the benefit of these thoughtful (and sometime thorough) over-views to the audience, nor the equal benefit to subsequent readers. It may be noted that the caveat, "These summaries have been collected together as a service for conference delegates" has been dropped. Thus it may be assumed that these printed reviews of the symposia sessions are there for the benefit also of those who were not delegates at the conference. If these contributions are of value to the broader span of science communities (which they are), it is a pity that they have been so well hidden. There is for example a page (p.262) of pure gold "*Animal rights and wrongs*" by Roger Scruton – a greatly respected philosopher – that should be compulsory reading for every student of all branches of the biological sciences and every member of the rationally thinking population.

The **Proceedings** continue in much the same vein through to 2007, with similar proportions of current research, invited papers and posters. Substantive contributions from the Equine sciences to the BSAS Annual meeting are now becoming established. The purposeful encouragement of papers relating to equines has had a noticeable beneficial effect upon the composition and value of the Annual Meeting. The inclusion of equine research and development as normal elements of the BSAS science agenda (as is the case for EAAP) was further encouraged through the twenty-teens by a series of successful BSAS workshops targeting investigational techniques and statistical analysis. Equines and equine research was seen as not merely important in the horse's standing as a *bona fide* livestock species, but also because equine studies were recognised as an important component of many courses in the tertiary education sector and therefore of increasing interest to the BSAS conference-going membership.

The BSAS Annual Conference and its **Proceedings** have all the appearance of settling into a programme of short papers, invited contributions, and posters that will produce not only a conference of scientific worth, but the output of a volume of **Proceedings** which, much like those prior to the 1980s, are of genuine value *in their own right* as a means of communication through the written word.

What role did the Society see itself as fulfilling in the second millennium? The **Proceedings**, being the record of the Society's Proceedings – its doings – are the test for that. The disinterested browser might be forgiven for concluding that whilst the Society was acknowledging that in Hammond's words "*Science is not science until it is applied*", in actuality, the measure of the success of the individual active members at the Annual Meeting was the *science itself* and *not its applications*.

The **Proceedings of the British Society of Animal Science** in their published form (with ISBN) are, through to 2007, firmly in the Society's hands as a Society publication dealt with wholly by the BSAS Office. It is however emerging as something that is quite different to merely a 'service for delegates'. The years 2007 and 2008 show the **Proceedings** as a medium of scientific communication which puts together a great number of original science reports (around 150 Theatre presentations, 120 Posters,) with a dozen or more invited review papers mirroring the changing nature of international animal science.

Unfortunately, the invited speakers, whilst giving presentations of undoubted worth, have not (in the main) considered it worth their while to prepare (as had often and beneficially been the case in the past) full papers for publication in the **Proceedings**. It is as if they too had got the idea that their summary was merely for the convenience of the conference organisers and the attending delegates – not for wider promulgation.

It has become noticeable that a significant number of the theatre presentations of work in progress now covers not interim reports of large on-going projects presented to colleagues by the programme leaders, but reports of shorter, smaller scale, less ambitious programmes, of the sort that often emanate from PhD and Post-doc programmes. These appear to be usually presented by the students themselves. Inevitably, this changes the tenor of the Annual Meeting. It is less obvious that the 'receiving' members – those interfacing directly with the feeding, breeding and livestock farming industries – are able to see the meeting as an essential part of their professional career development and technical updating. The following year the Treasurer (Brian Cooke) regrets that the membership has fallen to 770 (from an earlier high of over 1000), and the Technical and Ethical Committee recommends market research by an outside body to find out why membership is falling!

Given that most papers are multiple author, and that there are a great number of them, it is perhaps surprising that the conference attendance numbers have not gone up. (They have in fact stuck resolutely at around 400 for most of the life of the Society). It may safely be concluded that a large proportion of the members at the Annual Meeting are there because they are giving papers. It is also becoming evident that invited speakers are addressing not the user industries, but emerging scientists. In 2007 it was decided that, due to the large number of submitted papers that were needing to be fitted into three parallel sessions, the Mini (5 minute) paper should be introduced into some sessions to “accommodate more speakers as delegates”.

In 2009 the **Proceedings of the British Society of Animal Science** announce themselves as ‘**Advances in Animal Biosciences**’ and state “*This book is part of a series which is a companion to the journal ANIMAL*”. But apart from these few words on the inside cover, nothing has changed.

There however remained the need for those wishing to present their papers (current research reports) to the Annual Conference to prepare summaries so that, (a) the Committee responsible for programming the conference can be satisfied that the required (scientific) standards are met and then prepare a programme of parallel sessions in a coherent way through the conference’s duration, (b) as a service to delegates the summary can be read to supplement the heard word (and visual aids) delivered from the platform, and (c) afterwards there is a permanent record of events.

Volume 1 of **ANIMAL** (the successor Journal to **ANIMAL PRODUCTION** and **ANIMAL SCIENCE**) was produced in 2007. Three years later, under the same auspices published by Cambridge University Press, Volume 1 of **Advances in Animal Biosciences** is published.

Within **Advances** are the **Proceedings of the British Society of Animal Science**. Cambridge University Press see **Advances in Animal Biosciences** “*as an associated publication to the journal ANIMAL*. The stated aims give it much of the appearance of a Development Journal. A journal that can be used by those wishing to translate science into utility. Perfect! Ken Blaxter would have been delighted. Here at last was a means of securing the value of the BSAS **Proceedings**. There were many involved, but Cledwyn Thomas was a prime mover – this amongst many others, for Cled has been a stalwart champion of EAAP/BSAS affairs over very many years. Importantly however, **Advances in Animal Biosciences** under the controlling auspices of the **Animal Consortium** (INRA, EAAP, BSAS) does not just look after BSAS Proceedings, it publishes other such materials from other Societies and other Conferences as well. This should ensure the sustainability of the new journal, but it does not belong to BSAS anymore. BSAS is a contributor. Does this mean that BSAS has become just another Conference Events Organiser?

The 2010 **Advances in Animal Biosciences, Proceedings of the British Society of Animal Science** cover the Annual Meeting held in Belfast (with the Irish Agricultural Research Forum) earlier in the year. There are one page (A4) mini-papers (now called ‘Abstracts’ for the research reports, and one page (or less) summaries (also now called ‘Abstracts’) for invited papers.

**ANIMAL PRODUCTION**, especially in its first quarter-century, was as much a *Development* Journal as it was a science journal. Indeed, it did not see any clear distinction between ‘pure’ science and ‘applied’ science; only between ‘good’ science and ‘bad’ science. Only with the evolution of **ANIMAL SCIENCE** away from integrated and development works did the need for a separate ‘Development’ Journal come to be discussed. The discussion over recent decades has not reached any satisfactory resolution to this matter. The stated aspirations of **Advances in Animal Biosciences** to also publish Applied Development papers have, unfortunately, yet to see fruition.

Importantly for the future veracity of the content, there is a named Editor (Cledwyn Thomas, EAAP), an Editorial Board of thirty senior animal scientists and the statement inside the front cover “*The summaries have been edited.*” This document has clearly fulfilled a purpose for those organising the programme for the Annual Meeting, and it is of value to the Conference goers. But is the intention of **Advances** to be a formal scientific publication, or is it to serve only as a record?

Volume 2 (2011) of **Advances in Animal Biosciences** covers the Annual BSAS Annual Meeting at Nottingham. There are some fourteen invited speakers scattered through seven symposia sessions. By this time the annual meeting had three concurrent parallel sessions, and presentation times had been cut from 20 to 15 minutes (with questions), further limiting the amount of information that could be shared, and further curtailing time for useful discussion. Posters were beginning to lose their appeal (down to 60 in number) and were less visited by conference members.

Meanwhile, whilst BSAS symposia plenary paper givers are still restricted to ‘summaries’ of one page or less, the three presenters to the Plenary session of that year’s EAAP meeting had (Volume 2, part 3.) published their (excellent) papers in full over 16 pages. It would appear that BSAS might have missed a trick.

By 2017 **Advances in Animal Biosciences** advertises the fact that it has a management board with representatives of BSAS, EAAP and INRA (as well as the Editor-in-Chief and a Board of Editors). The publication itself is looking to

publish proceedings and symposium papers from any appropriate conferences. The 2017 BSAS Proceedings are thin with 131 summaries (of which 20 were posters), but the Animal Biosciences publication itself is handling output from three other conferences. The **Proceedings of the British Society of Animal Science**, in the form of their inclusion into the new journal **Advances in Animal Biosciences**, could now have the possibility of reaching for a wider audience – of particular benefit with regard to symposia reviews. But the scientific purposes (as opposed to conference-organising and record-keeping roles) of the proceedings remain to be exploited. ‘Advances’ is **not** the companion to **ANIMAL** such as Blaxter had envisaged – a medium to extend new science out to innovating users. Its promise to deal with “*the translation of basic and strategic science into the whole animal and farming system*” has yet to be utilised by BSAS. But then maybe the Annual Meeting no longer has any such intention.

### 3. The wider whole: Occasional Meetings and Other publications

In 1970 Kenneth Blaxter urged the British Society of Animal Science to avoid over specialisation – to consider the ‘wider whole’. He regrets the emphasis on “communication of short-term research findings to the exclusion of integrative accounts of where those research findings lead”. He suggests that Society funds could be used for “integrating reports”.

One of the ways that this shortfall in the Society’s delivery of its objectives (as stated in the constitution; to collect and publish information, to encourage the incorporation of research findings into farming practice), was addressed by the launch around 1978 of the ‘**Occasional Meeting**’ series.

These were anything but occasional, and became a central plank in BSAP activities. They were the natural successors to the format of the Society’s early meetings through its first ten years. At the rate of about one or two a year, special meetings, colloquia, workshops or symposia have been held for the benefit of members and others wishing to attend. These were/are popular and considered by the *science user community* as highly valuable. They attracted audiences of fifty to two-hundred and fifty, taking the form of invited (expert) speakers asked to present formal state-of-the-art papers in a field usually highly topical to the time. There would follow ample discussions both between speaker and audience, and importantly, amongst the audience members – views being freely exchanged.

The normal procedure was for papers to be prepared for full and proper publication. From 1978 to 2006 these reviews were presented as printed books in a designated series entitled ‘**BSAP (BSAS) Occasional Publications**’. Substantial both in volume and in quality of content, they were considered as particularly valuable for narrowing the Knowledge Transfer gap between Science and Practice, for affording a means of quick updating in fast-moving subjects, and for providing ready review material for consultants, teachers and students. BSAS has also published (at a rate of around one every year) a number of separate volumes dealing with symposia papers presented to various conferences (such as livestock fertility, meat science, precision livestock farming, etc.) with which BSAS has been involved in the organisation. This represents a substantially important science resource, but one that has become of limited circulation; lacking a formal streaming medium such as is provided by an internationally recognised journal.

The **Occasional Publications** together with the Meetings from which they emanated were clearly a much sought after and strongly supported part of BSAP/BSAS activity – fulfilling a defined need. Why then did they falter and finally cease as a formal series? Post the millennium, professional animal scientists found themselves with ever-pressing shortages of time for (a) up-skilling, (b) organising such events, (c) preparing ‘conference review papers’ and the subsequent ‘book chapters’; none of which counted to Research Assessment Exercises or career development on cv publication lists.

The Society has, on a number of ‘occasions’, been minded to publish material from workshops, or to specifically commission work, functioning in the role as a forum to come to some agreed views (through objective research) on how industry problems can be addressed, and to produce appropriate integrative reports.

The case history of one of these might yield useful insight. In 2002 there was acceptance in both the feed industry and academia that the Nutrient Requirement Standards for Pigs were either (like the ARC UK 1981 recommendations) hopelessly outdated or (like the NRC US recommendations of 1998) inapplicable to British circumstances. The absence of any useable reference standard was becoming an issue for both research workers and the feed trades themselves. BSAS, as a disinterested party, had commissioned a report a year earlier on the *Nutritional standards for livestock; pigs, dairy, poultry, beef cattle, sheep*. Unfortunately, nothing came of this excellent report apart from the work on pigs. *Nutrient requirement standards for pigs* was completed (including full consultations) within a calendar year by a trio of BSAS members representing academia, the feed trades and independent consultants. The resulting document was published by BSAS in 2003. It has been widely respected, read, referred to and used over subsequent years.

Unfortunately, the notion that BSAS should initiate commissions of this kind in other spheres has been studiously consigned to the long grass; presumably for fear of some difference of opinion arising and causing discomfort to some part of the BSAS membership!

Equivalent needs in both animal breeding and management were identified in 2011. While in relation to animal feeding, there are no standards extant for the other species (and pigs needs updating), nor for appropriate methodologies for nutrient evaluation, nor for reasonable expectations for rates of production from livestock enterprises. These initiatives appear to have entirely lapsed.

The strategy plan of 2011/12 calls unequivocally for Independent reports and recommendations such as standards for animal breeding, feeding, management & well-being, transportation, slaughter, product processing, food quality,

environmental protection, food security, experimental design. There is every reason to suppose that **Advances in Animal Biosciences** would publish such material, and there might even be scope for Europe-wide integration.

#### 4. Journals: **Animal Production, Animal Science, Animal**

The British Society of Animal Production's professional Journal, **ANIMAL PRODUCTION**, *Journal of the British Society of Animal Production* (Editors I.L. Mason and G. Wiener), was an instant success (thanks to the herculean efforts of its two Editors). It was much sought after as 'The' journal of choice in which to publish. It was compulsory reading for all researchers, teachers, and advisors in Animal Science and Production, and much respected by industry technologists. It was the journal to go to for state-of-the-art information of importance and value to both the Science and the Industrial communities. It had, from the outset a healthy subscription list, and its free delivery to members was a prime reason why the Society was so swiftly populated with an increasing membership after 1960. Ten years after its launch, **ANIMAL PRODUCTION** had a circulation of well over 2000. Thirty years after, it would stand second only to the American Journal in its publishing across the range of the animal sciences.

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By the end of the 1950s, The **Proceedings of the British Society of Animal Production** had become so important a medium for publishing animal science that it had become a journal in all but name. However, as 'Proceedings' it lacked the gravitas of a proper international publication of the sort that post-war scientists now needed to publish in. UK needed an International Journal in which to publish original peer-reviewed research; papers with full explanation of materials and methods, results, proper analysis and considered discussion, and abstractable summaries. Gerald Wiener (who had taken over as Proceedings Editor from Iain Mason) went with John Maule to visit Oliver and Boyd, the Edinburgh Publishers, and asked them if they might be interested in publishing a journal. They were.

Volume 1 (1959) has a generous 191 pages and 24 papers (thanks mostly to Gerald Wiener's substantial persuasive powers!). From that point on, **ANIMAL PRODUCTION** was publishing a balanced mix of original research papers on breeding, feeding and management, and continued to show a healthy respect for 'industry applications'. Through the sixties the journal is holding true to its name – and to the expectations of BSAP founders and members. There is much on how levels and quality of production can be improved. There are also papers emerging on behaviour and welfare (effectively the objective and scientific analysis of animal husbandry). There is a healthy balance of applied papers and those dealing with the more basic studies of underlying principles – the *what* and the *why*.

The journal is very much an integral part of BSAP. In the beginning, to a great extent, it is the Society's members who are publishing. And although the readership is evidently far wider than just BSAP members, one senses that it is for members that the published papers are being written. This position however soon changes; the journal coming to boast an international authorship and readership. It would be difficult to imagine that any member of the Animal Production community – research worker, university academic, college lecturer, student, advisor, consultant, policy-maker, member of a feed company, breeding company, innovating farmer, agri-business, etc. – could possibly ply their trade without being up to speed on what was being published in the Journal.

The research and development workers themselves (of UK, then internationally) shared this notion and were anxious to use **ANIMAL PRODUCTION** as a preferred medium for publishing their papers. In the early sixties the journal was about 300 pages in length, by the end of that decade it had more than doubled in size. The sheer volume of papers coming in for peer-review and editorial scrutiny was causing overload on its two editors. In 1963 James Greenhalgh (feeding) joined Gerald Wiener as an Editor. K.J. Robertson was added in 1965. By the end of the decade the team has been joined by Geoff Harrington (meat quality) and Lawrence Mount. The journal had started well in 1959; by the end of its first decade it was nothing less than an outstanding success. Papers are now being submitted in increasing number from overseas; including European Continent, North America, Antipodes. There is a stream of work from the ARC and DAFS research Institutes, from the Universities, the Development boards, and the R&D arms of the Irish, English, Welsh and Scots Advisory services, as well as from Industry (the feed industry in particular) .

By 1970 the journal is offering an eclectic mix of genetics, breeding, reproduction, carcass quality, feeding, grazing, nutrition, environmental physiology, in all the livestock species (pigs (dominant), cattle, dairy, sheep, beef), but the tone of the papers has become more scholarly, and experimental discipline stronger.

The decision made in 1971 to create a separate publication for the (relatively more gently refereed and edited) abstracts of the **Proceedings**, freed up **ANIMAL PRODUCTION** to be a rigorous international peer-reviewed scientific journal of excellence. It was entirely rational. However, it had unexpected consequences for the way the Society would see itself and behave from then on.

Up until 1970, what had started as a 'club' for scientific exchange amongst scientists, and for transfer of science into practical utility – a show, run entirely by its members for its members – had begun to change into an 'organisation'. Blaxter had alluded to this in his Presidential presentation. A Technical Committee had been set up in 1964 to help the

Society be more outward looking. Donald in his 1975 'End of an Era' speech talked of the need for the Society to be more outward-looking – to take its place in the world at large and not simply be a chat-shop for animal scientists to talk amongst themselves. These changes in the way the Society should see itself were proving difficult. Previously things 'just happened' and the meetings rolled along. Now there was a developing need for forward thinking and proper organisation – *management* for want of a better word.

**ANIMAL PRODUCTION** in its early years was not only avidly read by the members, but was also found of immense worth by non-members; especially academic libraries and students, and those others who were animal scientists and technologists, although not necessarily BSAP members. It was when it became obvious that the prime function of the journal was not to be read just by members, but to be read by *others* that the need to split it in 1972 from the **Proceedings** (only five years after they had joined together) had become unavoidable.

As soon as **ANIMAL PRODUCTION** was given a life of its own, it began to see itself as an outward-looking journal publishing science reports for benefit of the readers of the world. It was part of BSAP, but separate from it. It would come to have a Board and an Executive that saw the Journal as somewhat differentiated from the life of BSAP which centred more around the Meetings. The Journal had an independent set of objectives (and separate accounting head) focused around its being an '*International science journal of excellence*'. This was achieved to the considerable benefit of BSAP members and the world at large.

But what had happened with the Journal had unexpected effects upon the way the Society became to be orientated. The British Society of Animal Production had become for its members two separate entities. The journal **ANIMAL PRODUCTION** was where research papers were to be published and read, and the Meetings were where face-to-face exchanges took place. BSAP members both digested enthusiastically **ANIMAL PRODUCTION**, and BSAP members went to BSAP Meetings. But these functions were perceived quite differently. In the eyes of many, the Society was the Meetings – BSAP had a reputation for arranging really good meetings to which members went to 'network', to meet and challenge the scientists, to catch up on evolving trends in animal science, and to be apprised of the state of the game.

**ANIMAL PRODUCTION**, released from also publishing proceedings in 1972 went full-bore. Through to 1995 the Journal **ANIMAL PRODUCTION** will publish more than 800 pages annually of original research papers. The extent of the Journal's success, financially as well as in the service of Animal Science and BSAP cannot be overstated.

The front cover strap line for **ANIMAL PRODUCTION** always read "*Journal of the British Society of Animal Production*". As from 1987, however, it is not the Journal of the Society; it is "*An international journal of fundamental and applied research*". This is a most telling development. It states that the Journal is no longer the organ of the Society; it is a separate and independent entity. It might be suggested that this apparently innocent emendation has substantially strengthened the Journal, but has weakened the Society. .

The journal is also beginning to reflect a change in research worker's publication behaviour. Through the middle years of nineteen-hundreds scientists did not publish until they had a substantial body of analysed work that was sufficient to justify full discussion and proper conclusions to be drawn. The published paper was often a weighty exposition of a good number of years work by a research team. By the seventies, and increasingly thereafter, published papers were shorter, tending to deal with individual experiments, rather than experimental series. There was advantage in a scientist increasing *numbers* of papers, not their substantiveness. This would lead to an explosion of research journals and a dilution of the value of individual papers therein. Being in at the beginning, **ANIMAL PRODUCTION**, as an enterprise, largely benefitted.

The nature of the Animal Science Community itself had shifted. Prior to the 1980s there were very large state-supported entities in the form of the Agricultural Research Institutes and the Experimental Husbandry farms of the State advisory services. Both these organisations were first downsized and then ultimately dissolved. The science had moved away from the addressing of livestock industry problems and toward medical biotechnology. The people of UK were more frequently suffering from disease and infirmity than from hunger.

Gerald Wiener of ABRO had done well to be part of the trio getting the Journal off the ground in the first place in 1959. He did well again in 1972 separating the Journal from the Proceedings. As Senior Editor of **ANIMAL PRODUCTION** Wiener with his Editorial team of six (J.F.D. Greenhalgh (Rowett), W.G. Hill (Institute of Animal Genetics), L.E. Mount (ARC Animal Physiology), J. Rook (Hannah), J.C. Taylor (GRI)) handled the ever growing influx of papers through until J.A.F. Rook takes over as Senior Editor in 1975. The Journal has doubled the number of original peer-reviewed papers it publishes annually. Rook hands over the Journal with its ten-strong editorial team to T.L.J. Lawrence (Liverpool Veterinary School) in 1984. The number of papers now published annually had gone up again.

It has been a rather wonderful success story – highly profitable both for scientific advance and for BSAP finances. It wasn't to last.

For purposes of present understanding of what was happening to Animal Science through the 75 years of BSAS – and therefore to the types of reports delivered to BSAS publications – some analysis may be helpful to the reader. Broadly there are three major divisions in animal scientific discovery. (A) *Blue Skies* – far from market, and (B) *Applied* at industry level to improve efficiency or address a problem – near market. (C) *Development* trials, instantaneously useful – in the market. For the animal scientist the ‘market’ is the primary industry – livestock farmers and the breeding, feeding, and veterinary companies who immediately trade with them. (A) tends to be things which are really interesting and when examined may or may not be found to be useful. The big strides forward tend to come from this type of work, but to be useful the applied experimental step (B) is usually needed. (B) tends either to arise from (A), or from the industry itself – as problems requiring solution. (C) tends to examine (i) that which is already known to have application, but ways of delivering the innovation need to be demonstrated, or (ii) that which is not known to have application but industry would like to see it tried. For the first half of the life of BSAS publications it could be said that (B) was predominant, and indeed the perceived reason for the creation of the Society in the first place. (A) was too esoteric for a membership interested in applications, while (C) was somewhat frowned upon as ‘not science’. Applied science was mission orientated. After the Thatcher years, Government funding was largely withdrawn from B. Applied science was no longer to be orientated to a mission, but to the requirements of the funders. Government funding was weighted toward (A); while Industry funding was weighted toward (C). Given that the Journal was anxious to improve its reputation in the science publishing forum, it is unsurprising that publications of gripping industry interest have become less frequently published.

To reflect the changes in the nature of the Society’s membership (toward science and away from production), in 1995 **ANIMAL PRODUCTION** will become **ANIMAL SCIENCE**. Thirteen years later it will have become **ANIMAL**, to be run not by the British Society of Animal Science, but by the Animal Consortium of INRA, EAAP and BSAS, together with the publishers Cambridge University Press. The BSAS Journal will be found not to be able survive through the nineties and early two-thousands; it had to be (effectively) sold-on into bigger hands, or die. Were **ANIMAL SCIENCE** to fail there was a danger that the BSAS would fail also, or at least be substantially diminished. To keep the Journal thriving and to have a one-third part in that would be both necessary and shrewd.

The presumed promotion of **ANIMAL PRODUCTION** to **ANIMAL SCIENCE** might have reflected the change in member focus, but it did not have any long lasting positive effect upon the Journal’s falling scientific standing. Ten years later, in 2005 the format changes from being approx A5 in page size to being A4 and having a glossy cover – a cover which announces ‘*Official Journal of the British Society of Animal Science*’. T.L.J. Lawrence (Liverpool Vet School) is the Senior Editor, with 11 scientific editors and two technical editors to help him. The Journal is making money (about £70,000 p.a.), but subscriptions have fallen to around 500, and the standing has dropped from third amongst ‘animal science’ journals to around thirteenth. It is losing **impact**.

Things are reaching the point where Heads of research Departments are discouraging their staff from publishing in **ANIMAL SCIENCE** because of its low impact factor – a high impact factor being fundamental to the success of any research group entered into the national assessments of research excellence such as the RAE and REF. Nigel Scollan (then Chair of Publications Committee) and Cled Thomas take action by transferring publication (and ownership) out of the direct hand of the BSAS Office and into the hands of a professional publisher, CABI. This will reduce profit margin per subscription, but hopefully increase reputation and sales. At this point, **ANIMAL SCIENCE** was receiving around 250 papers annually, and was rejecting 30-40% of them; but even then, it appears, the standard of science is still not adequate for international accolade. Importantly, the BSAS Office could no longer be expected to handle all the complex elements of aggressive science publishing that the environment of the 2000s demanded.

But even as CABI is taking **ANIMAL SCIENCE** on, Scollan and Thomas are planning for rather more dramatic solutions to the Journal’s problems. Which, whilst now having reduced its income generation, is still in trouble on account of lowering quality of submitted papers and the falling impact factor. They are exploring the possibility of creating a Consortium of EAAP (European Federation for Animal Science), INRA (Institut National de la Recherche Agronomique) and BSAS to launch a “**European Journal of Animal Science**”. The Consortium will be given both management (Scollan) and Editorial (Thomas) leadership from BSAS. Meanwhile, in 2006, CABI sell **ANIMAL SCIENCE** to Cambridge University Press!

The European Journal is published as **ANIMAL** in 2007. **ANIMAL** (*‘An International Journal of Animal Bioscience’*) will bring some £50-80k into the Society every year over the next decade. Total papers published in Volume 1 were 163 of which 20 were reviews (half of these being previous plenary papers from Conferences). In its first few years, of the original papers published, approximately one quarter were on feeding and nutrition, a fifth on breeding and genetics, one sixth each on health and welfare, one tenth on product quality and livestock systems. The Editorial Board’s reject rate is 60 – 65 per cent, twice as high as that pertaining in the latter years of **ANIMAL SCIENCE**. **ANIMAL** has a six-person Management Board, an Editor-in-Chief, an Editorial Office, three Technical Editors, and an Editorial Board of around one-hundred persons, (divided into nine sections each with its own senior editor and deputy editor).

**ANIMAL** has no ambition to be a *Development* journal involved in science transfer into applications. It is a Science Journal. If a Development journal is considered of value, the way is clear for **Advances in Animal Biosciences** to fill that role. However, as discussed above no such intent is yet clear.

There remain the vexed questions. When, if ever, does a conference abstract become a quotable source of scientific information rather than a report of work yet to reach its interpretable end-point? What is the place of the integrated symposium review – is it definitive science output (as publishable in **ANIMAL**) or is it a medium for updating existing knowledge (as publishable in **Advances**). And last, where do ‘Development Studies’ fit in?

## 5. Making it all work: Stratagems, tactics, operations

At the beginning, organising meetings of the Society was relatively straightforward. The President, or the Secretary, or a member of the (eight or so person) Executive would make a suggestion which would be agreed or not agreed (invariably the former). Discussions as to forward plans would be held in a quiet moment (often in a bar) at the current conference. The group 'running' the affairs of BSAP was small and well known to each other; it was a club of colleagues. The general topic (or place to visit) for the next meeting would be settled, and speakers proposed. Then it would be a matter of getting things done. Venues booked, speakers invited, letters written, members contacted.

In the fifties and sixties (and to some extent through into the seventies), the general pace at Universities and research institutions was very much slower than became the case after 1990. Working hours were largely self-determined. There was time to do things like attend to the business of your professional society. Indeed, of the senior BSAP members and of the landed farmers, it was expected. Of the less senior, aspirations toward career development would be much helped by a cv which included time spent working on the business of BSAP; one's line managers supported and urged such commitments to outside 'benevolent' institutions such as one's Professional Society. (This would change following the Thatcher years).

Importantly however, until the 1980s, those entrusted with the making of decisions had a veritable army of 'helpers' assisting them to see through the implementation phase. Secretaries, Personal Assistants, Administrators, Technicians, Typing Pools, Janitors, Post-room... Although strictly in the employ of a University, or a Research Council, or Levy or Government-backed body, such people could be readily diverted to carry out the business of the Society; and the Institutions concerned smiled upon it. Public Service was written into the job spec.

This too would change. In 1975 AFRC employed 6732 people on its scientific staffs. In 1990 the number was 3438. There was half the number of people available working twice as hard. Little wonder that the days that BSAP could depend upon the state-backed Institutions to come up with volunteers were over!

The weight of the work of the Society in its early years fell upon the Secretary (Nichols, Maule, and Read were all paid by 'Government'), and upon the President. It was helpful (necessary) for the Secretary and the President to command resources that could be willingly diverted to BSAP business. By the end of the century the reversal of these benefits to the Society was complete. In every respect those resources were gone, and in addition, the paymasters no longer smiled upon their staff/funds being used to the 'Public Good'. Transition by adaptation to changing times has been painful; the road has been made of cobbles – both bumpy and slippery at the same time.

Included into the 1950 **Proceedings** is a list of members and the Constitution. The objects of the Society are *inter alia* to provide opportunities to meet and exchange information, and, importantly, ideas. To support investigation of problems pertaining to animals, to collect and publish information, to encourage the incorporation of research findings into farming practice, to cooperate with other like-minded organisations.

To do all of these properly there would need to be an organised administration...

### **The Administration**

#### *Secretary and Treasurer*

The first (1944) Executive Committee comprised Dr John Hammond, Dr A.B. Fowler, Mr Alec Hobson, Mr James Mackintosh, Professor W.C. Miller, Mr W.A. Stewart and Professor R.G.White. The Secretary-Treasurer was Dr J.E. Nichols.

In 1947, the hard work complete, J.E. Nichols goes to the Professorship at Bangor, and passes over both his post at The Commonwealth Bureau of Animal Breeding and Genetics (in the Institute of Animal Genetics, Edinburgh), and his post of Secretary-Treasurer at BSAP, to his successor J.P. Maule.

In 1958, the jobs of Treasurer and Secretary were split, Maule remaining as Secretary and J.L. (Joe) Read (ABRO) as Treasurer. Until that time there were running BSAP; J.P. Maule, the President, a small Executive Committee, and a Publications Committee (to support Mason and Wiener). All positions were, of course, honorary. At this time there were some 600 to 700 members in the Society. Attendances at the Winter Meetings seemed to number something around 200, with 50-100 attending the Summer gatherings. The post of Secretary was passed into the willing and gentlemanly hands of James Walker-Love in 1961 (West of Scotland Agricultural College – DAFS funded). J.P. Maule had been happily running BSAP since 1948.

Blaxter had warned the Society in 1970 that the load upon James Walker-Love (Secretary) and Joe Read (Treasurer) – and their respective offices and employers – was too great to continue to be borne in this way. He recommended setting up a

Central Office and paying for an administrative secretary to be placed within it. In 1972, Harry Swan of Nottingham University took over as BSAP Secretary for four years, then the next three were looked after by John Southgate (MLC). Ken Deeble was Secretary for the 1979/80 year. Colin Slade (ADAS) was in post from 1980-83, Mrs J Newton was there till 1986, and Grahame Gunn (HFRO) held the fort until 1990. It was no longer a job to be relished. Nobody wanted it for any length of time – continuity was a real issue.

James Walker-Love had been perfect as BSAP Secretary, and he (like Maule) had relished the role. After that however, the work load grew and grew and the work lost its savour, cutting into the day job of incumbents, and testing the patience of their employers. Through these middle years, the Society was steered by the Executive (the implement of the Society's business) and its three sub-committees: *Programmes* which looked after content and organisation of Conferences; *Publications* which looked after the Journals; and *Technical* which did the forward planning, as well as interfacing with the rest of the world when the President was not inclined. Overseeing all was the BSAS Council which 'owned' the functions of the Society and provided governance. The Office delivered the day-to-day hard work.

In 1989, BSAP decided it should bite the bullet and raid its (now substantial) pot of money to fund a permanent (half-time to begin with, then full-time) *paid* post of Secretary. Mike Steele, ready to give up some parts of his previous employment of global itinerant consultant for the life of a part-time Scottish sheep farmer, was appointed. Mike made such a success of running the Society that it was decided to upgrade the post of Secretary to one of CEO, which was confirmed in the late 1990s. In his quiet but effective way he ran BSAP/BSAS until his final retirement in 2017 (an event causing great anguish to his very many friends and colleagues). He was succeeded by Bruce Beveridge.

The Treasurer's job was much less arduous than that of Secretary, indeed, through until recent years it was a bit of a sinecure. The routine work was done in the BSAP Office, while the statutory commitments were covered by a firm of accountants. The Society's income always exceeded its expenditure, and there were ever-growing reserves held in investments. Joe Read handed over to his fellow sheep researcher, A.J.F. Russel (HFRO) in 1973. In 1981 Murray Black (Edinburgh School of Agriculture) took charge and delighted in telling the AGM in what fine shape the finances were. BSAS sadly lost Murray Black, one of its most able and dedicated servants, in 2000 when that dear and much-loved curmudgeon Brian Cooke (recently retired from the animal feed industry, but still a *bon vivant* and the man to be sat next to when the red wine was being ordered) took over, sailing the ship through untroubled waters while threatening dire consequences unless the annual income stream was regularly increased.

Howard Simmins (by this time self-employed as a private feed-industry consultant) took over as Honorary Treasurer in 2012 following the untimely death of Brian Cooke.

From the 2000s onwards, the Society would overall make steady gains in its balance of funds carried forward of around £15,000 annually. At the time of the financial crisis of 2008, BSAS had nearly three-quarters of a million pounds of 'available funds' held in investments. Under Howard Simmins careful stewardship (every Treasurer wants that written about them), not only has BSAS financed numbers of conferences and workshops every year, underpinned publications, put in jeopardy all the Society's resources to float EAAP 2016, and gifted all the awards and scholarships, but has done all that in the face of falling membership subscription income. A major part of BSAS's charitable works is the running (at a loss) of conferences and workshops, and providing budgets (spending-money) to its active groups such as the Student Council, the Associations, and Accreditation.

At the time of writing, the 'available fund' of the Society is one million pounds. Given the possibilities for flux in both investment income and in expenditures (viz EAAP) this level of security is considered proper. As a charity, BSAS must ever remain willing to fund its objectives as stated in its constitution. All BSAS activities are charitable in as much as they are planned to lose money. The only money-generating activities are the publications of the Animal Consortium, membership fees and investment returns.

Running conferences normally resulted in losses of £5-25,000. Income from subscriptions could never cover these losses together with the salaries of the CEO and Office staff. While the Journal(s) have given an annual income of around £50-80,000, the importance to Society funds of financial gains from its investments is supreme. Meanwhile, the generosity of industry sponsors supporting in its activities has become of vital importance to the future of BSAS.

That the Society should actively seek sponsorship from the Industry sector as a legitimate part of its funding stream to fulfill the terms of its constitution was first floated in the late 1970s, but was, by-and-large eschewed until the 2000s. From 2010, the Society would be actively and regularly seeking sponsorship from Commercial companies. Extra-mural support would become a *sine qua non* for the running of BSAS conferences. Winning industry sponsorships depends upon the local knowledge of conference organisers together with direct support and co-ordination from the BSAS Office. With projected reductions in income from the Journals and from investments, sponsorship is no longer a nice-to-have add-on; it is a must-have essential.

*Office*

The BSAP Office was where the Secretary was. Blaxter had warned in 1970 that this could not last, and some more organised provision would have to be made. Kevin O'Connor (MMB) was President in 1980. The Milk Marketing Board had always smiled upon BSAP and the first BSAP Office as such was looked after at the Thames Ditton Headquarters, with Jenny Newton as Secretary. Jenny Newton was supported by an agency which looked after membership subscriptions. This was not efficient. Graham Gunn (HFRO) in 1986 was most happy to have the Office move up to the Edinburgh Bush Estates Farm Office (next door), to be in the capable hands of Joyce Darling, whose domain was adjacent to that of Murray Black – Bush Farms Director and BSAP Treasurer. The three of them ran BSAP with great effectiveness through to 1989. When Mike Steele was appointed as Secretary, things continued in similar vein. Bridget Hilton came to help Joyce in the early nineties, and took over as the BSAS Office manager when Joyce retired in 2003. The BSAS Office continued to be co-located with the Bush farms office until being re-housed in its present premises at Easter Bush. Bridget Hilton would come to have part-time help to handle the membership and the finances (now Frances Reid and Fiona Ferguson).

Through the nineteen eighties and nineties, BSAP was on semi-automatic pilot. The main event was the Winter Conference, which tended to be organised on the basis of 'Scarborough – same again as last year'. Members (and others) submitted their abstracts/summaries to the Programme Committee which reviewed the offered papers and organised the Conference programme into (semi) coherent sessions. The Office produced from the abstracts the Programme and Summaries book for the benefit of the delegates (and the record). The Hammond lecturer, and maybe one or two others would be invited as plenary speakers (usually at the President's behest). Each year there would be one other 'Occasional' meeting, and maybe a workshop, (possibly at the suggestion of Technical Committee) which would be organised by the local group concerned, who would also collate papers and edit into an 'Occasional publication'. The Publications Committee overlooked the strategic affairs of **ANIMAL PRODUCTION**; the day-to-day work being through the Senior Editor (Tony Lawrence) and his editorial team of science and technical editors. The statutory meetings of Council came and went ... .. Things would change.

Into the 2000s BSAS dependency for many of its office functions upon the goodwill of its members and their organisations had to come to an end. Steele was promoted to BSAS CEO, and his job spec widened to be more than 'running the conferences'. Brian Cooke as Treasurer was required to be more active, not just in looking after the accounts, but in ensuring expenditures was wisely placed. The negotiations to float **ANIMAL SCIENCE** first to CABI and then to CUP were arduous for the Office. Cooke pursued a fraught series of negotiations with EAAP and INRA preparatory to the launch of **ANIMAL** which happily resulted in satisfactory financial arrangements [Thank-you, Brian] and what is proving to be a satisfactory Journal.

Following the implementation of the Strategy Plans of the twenty-teens and the widening out of the Society's activities (see text below), the work of the office increased – not helped by the load resulting from implementation of new labour-saving computer systems! The successes of the initiatives with Accreditation, Associations, Corporate Membership, and Communications etc. have led to more Office activity. To which, over this period of time, was added the increasing involvement of BSAS in running conferences (sometimes with other organisations). Presently the Office delivers around two or three substantial conferences annually, this being the most demanding and embracing office function. Information outreach, both to the membership and the 'outside world' was enhanced by the involvement since 2013 of journalist and tweeter Caroline Stocks, while Leigh Murray's appointment was made full time in 2017. Accreditation, handled from its inception in 2014 by the Accreditation and Governance Group Chair, was in 2017 established with Alison Christie as Accreditation's Executive Manager. Jon Day, whilst not strictly 'Office' has, since 2014, taken on increasing responsibilities for the vital activities of strategy implementation, corporate membership, sponsorship and media.

The present BSAS CEO inherited in 2018 a substantially larger and more complex team, led willingly and ably by Bridget Hilton, than Mike Steele had found thirty years earlier.

*Website*

In 2006 BSAS had its website up and running. At that time, the website was a means of stating to the world what BSAS was and what it did. Every now and again it would be given a make-over and new information added, such as the dates of next meetings. There were scrollable-through pages to be read. Memberships of Committees could be put up there, Minutes, etc. Nobody much looked at it, but having it was an important part of being an organisation in the public domain.

Through to 2011 the potential of the website was evident, but not realised. It could be an interactive means of better communicating with the membership. And the thing most exercising the minds of members was that they were not being well enough communicated with! The strategy plan of 2015 gave added impulsion to the development of the BSAS web platform that is seen today. Through [bsas.org.uk](http://bsas.org.uk) the full range of BSAS activities can be accessed. News items, reporting of events past and alerts to events upcoming (within and outside of BSAS auspices), dead-line prompts, access to on-line application to attend conferences, apply for memberships, and the whole panoply of interactive interfaces that now make up the Accreditation and CPD suite of programs. All the BSAS Associations have active sections (Academia, Industry, Student Council), and there are sections dealing with scholarships and awards. Importantly, all BSAS publications, past

and present (including **ANIMAL PRODUCTION, ANIMAL SCIENCE, ANIMAL, Proceedings, Animal Bytes**) are now available on line through the website. In 2017 a new element was introduced, that of access to numerous presentations made at the Annual Conference and available on the website as videos.

#### *Commemoration of Hammond*

The *Hammond Lecture* is the most prestigious presentation to the Annual Conference with a sixty-minute slot. It is considered to be a great privilege to be invited (by the BSAS President) to deliver the Hammond lecture. The first was delivered in 1969 by C.P. McMeekan, a Newzealander who had worked with Hammond on growth in pigs. There have been, over the years, many excellent presentations (and occasionally some dire) from senior international scientists. The quality of these papers, and the undoubted effort put into their preparation, makes them highly appropriate for wider dissemination. The written vehicle for this would naturally be the **Proceedings**, while recently there are video recordings of the full event put out onto the website.

The *Hammond Award* is presented annually (if appropriate) to an outstanding mid-career scientist in recognition of research work of outstanding excellence. The first recipient (1968) was D.G. Armstrong, the nutritional biochemist.

The association of BSAS with John Hammond is not inappropriate, given his reputation as a scientist driven toward industry applications. However, there have been others through the life of the Society equally as deserving of their names being noted. So far, however, apart from the ‘awards’, there has been no move in this direction.

#### *Scholarships and Prizes*

BSAP and BSAS have over the years made a large number of awards; for lifetime achievements, for quality of science and presentation, to support travel and work in distant places.

In 1989 BSAP joined with RSPCA to make an award for innovation in *Animal Welfare*. The first recipient was David Wood-Gush, who amongst other things launched (with the incumbent Professor there) the MSc in Animal Behaviour and Welfare at Edinburgh. The 2017 award was made some thirty years later to the Directors of the programmes that are the inheritors of David’s legacy.

The *President’s Prize* was initiated originally in the 1970s to be awarded for the best paper at the Annual Conference, open only to those making their first presentation. It has offered encouragement to young scientists (and some rivalry amongst their institutions). The *Industry prize* is given to early career scientists whose paper is judged – by industry members – to be likely to have the highest applications impact. It was initiated in 2014 as part of the strategy plan by industry to re-engage with BSAS.

In recent years it has been assumed that financial support to travel to conferences and to visit research laboratories is most needed by (and best spent on) early-career members (e.g. post-graduate students and post-docs). There are some six awards (amounting to up to £5000 each), associated with past members of BSAP/BSAS. These were begun with donations from members, and by association with their names continue to draw past servants of the Society to the attention of its current members. They are; Alan Robertson (1992), Kenneth Blaxter (1999), Murray Black (2001), Steve Bishop (2012), Kevin Shingfield (2016), Mike Steele (2018).

#### *International*

Whilst the Society’s record of collaborations with other like Societies world-wide is not especially notable, as has been picked up in every strategic plan (see below), BSAP & BSAS have nonetheless succeeded over the years of their lives in achieving a high profile in international science and science publication, as befits the Society’s origins and membership. The Annual Conference (as indicated by attendance and paper authorships) is an international affair. Many members have had strong and lifelong commitments to international livestock science and development; not least the CEO, Mike Steele. Other notable ‘Internationalists’ have included Gill, Orskov, Hovell, Owen and Simm.

Individual member’s contributions have often led to the Society arranging – and subsequently producing fully published proceedings – for Overseas Conferences and workshops. These would include such as those in; Kenya, Mexico, Thailand, Tunisia, Ireland, Netherlands, Greece, Poland, Lithuania...

#### **European Association of Animal Production**

At around the same time as BSAP was learning to walk; EAAP was born (in 1949). BSAP Officers had been involved in EAAP proposals since 1939, but BSAP did not join at that time because (a) the annual membership fee was too expensive, (b) delegates would have to be sent at further expense, (c) proposals for a Rome Office were overelaborate, and (d) EAAP notions for organising International Conferences were excessive both in terms of organisation and cost. The other constituent organisations of EAAP were supported by their governments, whilst BSAP was funded (privately) by its membership.

Nevertheless in 1952 BSAP became members of the European Association of Animal Production and have since played an extremely strong part in its affairs, both scientific and administrative, and contributed fulsomely to the works of its Commissions. The (re-) organisation of EAAP which began in 1958 was strongly influenced by substantial inputs from BSAP senior members (H.R. Davidson, Richard Trehane, Lord Digby) who were stalwart supporters of EAAP, and BSAP's membership of it. Trehane became EAAP President in 1961. BSAP funded the EAAP International Congresses of 1966 (Edinburgh) and 1994 (Edinburgh, 1100 delegates, masterminded by Maurice Bichard), and BSAS the EAAP International Congress in 2016 (Belfast). This latter event should not pass without paying credit to Sinclair Mayne, 66th BSAS President, who has served the Society (like so many other Irish members) tirelessly over many years. Through until the 2000s EAAP had been a significant part of many BSAP members' scientific activities; and reciprocally, BSAP member input to EAAP Commissions was considerable and sustained. Regrettably, such cannot be said of the present day BSAS membership. Maybe EAAP is seen as inadequately scientifically rigorous. The casual observer might be forgiven for failing to understand how BSAS does not see more (not less) of its future lying in cooperative ventures with EAAP.

The total costs of EAAP 2016 marginally exceeded BSAS total available funds - an extremely hazardous position for a society without any Government underpinning to put itself in. Fortunately the EAAP Belfast Conference was a great success (best attended ever, despite bleak warnings two years earlier that nobody would come from Europe to Belfast, and BSAS had made a foolish choice). There were over 1550 delegates from 60 countries; from research science, industry, academia and consultancy services. There were over 70 sessions across 4 days including a rather greater number of applied topics than had come to be experienced at BSAS's own Annual Conference. With the help of substantial sponsorship support from Industry, EAAP Belfast, to everyone's considerable relief just about broke even financially. It was Mike Steele's last hurrah and a triumph. It had been a famous week.

### Strategy planning

Forward thinking was the epitome of the Founder Members of BSAS. They founded BSAS! This was a bold and grand plan. Within five years all their aspirations were being successfully played out: the conferences, the symposia, the proceedings, the publications media for exchange amongst scientists, the forum where science met farming, and the promulgation of science in the service of innovative livestock management practices. Through until the mid-nineteen-seventies, the Society had its being, knew what it was doing, and did it very well. Membership and attendances at meetings were never higher. But warning salvos were fired by two heavyweights; K.L. Blaxter and H.P. Donald. Peter Wilson also had a few words to say in 1995, and set up the following year the *Strategic Plan Working Group*. This group was strong on gravitas, travelling to locations of importance and taking expert witness statements from people of importance as to where BSAS should go next. By all accounts a wizard time was had, and a report duly prepared. This comprised broad well-intended conceptual proposals, picking up on the need for actions particularly with regard to 'Overseas', 'PR', Farmer membership, EAAP, and the importance to the Society of serving better the Technology Transfer communities. Wilson (regrettably) advocated "*evolution rather than revolution*", at which point (wholly predictably) the initiative ran into the sand due to a complete lack of mechanisms for implementation. In the later years of the 1990s, matters of strategic concern for the future of the Society would frequently be discussed in Committee. Little if anything would come of them – there was (is) still no effective delivery mechanism.

The drive for better future proofing in the 2000s came from the evident falling away of that vital resource – MEMBERS! Increases in BSAP 'Ordinary' membership had come steadily (from 300 in 1949) through the fifties and sixties (550 in 1959) so that membership numbers exceeded 1100 by 1972 (more than half in ('state') research and ('tertiary') teaching, most of the rest in the trade and state advisory services, with few only involved in primary industries).

By the turn of the century a third of that membership had been lost. In 2004 there were 600 'Ordinary' members; in 2012, 400. One of the current Presidents of that time put it "The only reason I am a member is out of a sense of loyalty to BSAS. I can perceive no actual value in membership itself." His point was there were no evident benefits for paying the subscription fee. Access to the Journals and to the Conferences (the main reasons for being a member) was not restricted to members only! There needed to be more added benefits to BSAS than a small reduction in the Annual Conference fee!

After the farmers had left, for similar reasons (lack of relevance) the technology advisory sector then began to fall away (of course, there were in any event fewer of these following funding withdrawals for both state and industry advisory agencies). Losses were not made good by equivalent gains in members from research and academia. In the Universities the general trend was for Agricultural student numbers to be falling. Further, while in 1981 there were 22 State-funded Premier Agricultural Research Institutions in UK, by 1991, there were just 7. Today, BSAS-orientated livestock research primarily emanates from the Universities and BBSRC strategically supported work at three centres (Rothamsted, Roslin and Aberystwyth). Attendances at conferences had, however by-and-large held up (425 at York in 1992, 500 at Nottingham in 2012).

The perceived need for ‘Horizon scanning’ and ‘Strategy planning’ came to the fore at the end of the century. The Presidency of 1998 had a go at it, but apart from there being ‘a plan’, there was little obvious by way of radical change in the conduct of the Society’s affairs.

In 2004 the Student Council had been set up to provide a means of supplying a student to sit on BSAS Council (as was the ‘good-practice’ of the time). It had the strongest support from President Sandra Edwards, bringing her University experience to bear. What happened next was that not only did the presence of a student considerably smarten up affairs at Council, but the students picked up the ball and ran away with it! With a BSAS budget (£k5) they fixed up a ‘Student Meeting’ the day before the annual conference, inviting prestigious speakers. They organised a quiz night (and afterwards) during the Conference (old lags invited). They arranged other meetings around the universities on topics-of-the-day (such as experimental analysis). The Student Council, being such a huge success, awoke the Ordinary members to the possibilities of a bit of pro-action on their part too.

The Council had supported the proposition that there should be a forward looking review which took place in 2005/6. Members would be surveyed as to their views on BSAS’s future role. The Technical and Ethical Committee commissioned an outside agency for a membership survey which reported strong support for the BSAS Conference organising function, but thought that BSAS was inadequate in its communications with the industry at large. BSAS Council decided that to address the matter of falling membership there should be working groups to consider; (a) raising the profile of BSAS within academia (staff and students), (b) the mission, (c) possibilities for new knowledge transfer focussed on internet communications, (d) development of BSAS involvement in CPD/Accreditation matters. The 2007/8 Presidency (Geoff Simm), with the backing of the Presidents’ Committee, commissioned a proper ‘5-year plan’. The President himself masterminded ‘profile raising’ by arranging meetings with members of parliament in Westminster, Holyrood and the Senedd. These were well supported, rewarding at the time, but with little longer-term benefit. However, the modern era of forward planning owes much to the original impulses generated by Simm.

The series ‘**Animal briefs**’ was specially commissioned to give policy makers that for which they had asked – ready and unbiased information on topics of the day. The ‘briefs’ failed from the outset on account of difficulty in finding writers and having no demonstrable readership! ‘**Animal bytes**’ has been more successful. This series takes from the Annual Meeting selected topics for subsequent re-writing in a popular style. These were (still are) put up onto the website. Whilst sponsored by AHDB (for 3 years) these made effective communication media, but latterly were found more challenging to sustain because of difficulty in finding appropriate writers. Nonetheless **Animal bytes** (in contrast to Animal Briefs) is seen as a successful outcome from strategy planning. The model is sustainable (given hands ready to translate conference presentations into popular science), and the existence of a readership is demonstrated by the number of hits on the website.

This same initiative would lead to the appointment (eventually) of a part-time ‘**Communications Officer**’, the arranging of ‘**Industry sessions**’ at the Annual Meeting for the specific benefit of an ‘industrial’ audience, and recruitment of ‘**Corporate memberships**’ amongst commercial firms whereby at reduced rates a cohort of new members could be identified. BSAP had asked Janice Harland (an animal nutritionist out of David Armstrong’s school working in the animal feed industry) to be the ‘Press Officer’ in the 1980s to address the issue of the Society’s failing interactions with the world at large – a post that she had filled with enthusiasm. However, after her leaving that role (to concentrate better on her consultancy business), the Society had lost the knack, and public relations had again faltered. The cry for the Society to become more attractive to farmers had slowly faded through the sixties when most of the members were happy to see the Society become more attractive to scientists. By 1995, only a faint bleat could be heard (from the older members). The cry that replaced it was one for the society to become more attractive to livestock’s allied trades (feed, breeding companies and veterinary) and to the Technology and Knowledge Transfer sectors. The Corporate membership initiative was frowned upon by a significant cohort of those members that attended the AGMs (never a representative sample), and the idea was left to hang for a few years; only being picked up seriously as part of the next strategy plan in 2015 (and now proving its worth).

In 2011 the AGM agreed a re-visited Constitution for the Society. It is not much divergent than that formulated in the early years of the Society, except that there is less emphasis on the duty of BSAS to see the science through to practice – the concept is still espoused, but the feeling of an imperative to do it has gone.

The cynic of 2011, glancing at the stated objectives of the Society, would find nothing in them that could not be reasonably well met by the holding of the Annual Conference and the publication of **ANIMAL** and **Advances in Animal Biosciences, Proceedings of the British Society of Animal Science**. In particular, science transfer would be interpreted as encouraging the involvement of Technology Transfer Agencies in BSAS Meetings and workshops (attendances would indicate success in this). There remained little appetite for cooperative ventures with other like-minded Societies in UK, Europe and Worldwide except those that self-delivered such as EAAP, WPSA, ATVRW.

It is interesting however that whilst every forward ambition statement for the Society includes a desire for it to speak better to the ‘outside world’ on matters of animal science and animal scientists, the constitutional objectives do not explicitly

include “Pursue the Professional interests of the Society’s members”. This is a significant oversight if BSAS is to follow the enjoiner of Blaxter, and others before and after, that BSAS should behave more like a Professional Society and less like an Exhibitions organiser.

What the 2011 AGM had received and accepted was “*BSAS 5-year Strategy Plan Progression – Strategy Report and Road Map*”. This was an “*Action Strategy*”, its purpose was to brief-out what needed to be done following the plan of 2007. Needless to say, it began with both a “*vision*” and a “*mission*” statement!

*“The vision is for a Society that functions as the authoritative and professional body for governance and oversight of Science impacting upon farm, companion and leisure animals. A Society that is visibly the professional forum for discussion and dissemination of Animal Science R&D, through meetings, publications and accessibility to industry end-users and public bodies in their widest senses.*

*The mission is to deliver science with the impact to give us food, fibre, and animal companionship with minimum detriment. The agenda for the mission is: Food Security, Food Quality, Animal Well-being and Environmental Protection”.*

[The report of the Council, 30th November 2017, confirms as the objectives and activities of BSAS:

*The British Society of Animal Science (formerly The British Society of Animal Production) was formally constituted on 6th January 1944 and amended at the Annual General Meeting in 2010 in order to:*

*Provide opportunities for those interested in and concerned with the science relating to animals and its application to meet and exchange information, ideas and experiences.*

*Encourage the investigation of problems and matters pertaining to the science related to animals and its application.*

*Collect and publish information about the science relating to animals and its application; to print and publish any periodicals, books and leaflets which the Society may think desirable.*

*Stimulate the incorporation into practice of advances resulting from research, experimental work and practical experience.*

*Co-operate with any other organisation in furthering of the objectives of the Society.*

*Do all such things as may be incidental or conducive to the attainment of the objects or any of them.]*

The 2011 Strategy Report document saw its own objective as dealing with “Two related problems: *Falling membership and reduced visibility*”. It saw BSAS as being in danger of *losing its importance and relevance*. That report had resulted from a team of ex-presidents led by Colin Whittemore which had looked at the various elements of the Simm report and come to the conclusion that actions were needed in the following general areas; collaboration with other organisations, projection to the lay community, increasing membership, creating relationships with end users, developing member benefits, and increasing back office and front office functionality (the latter with particular regard to the Society presenting to legislators and policy drivers views representing the best interests of its members and their science).

The Plan was endorsed at the 2012 AGM. What resulted was a restructured committee framework, the setting up of two new functional groups, one for industry (**Industry Association**), and one for academia (**Academia Association**), and later one for overseas members (**Global Association**). These Associations were to bring their respective sectors closer to the work of the Society. Primarily to give members from the feeding, breeding, equipment and veterinary sectors; the post-grad and post-doc students; and the overseas members, a more direct stake in the organising of conferences, setting of agendas, and determining future policy and initiatives. One step toward making BSAS a ‘Professional body’ was achieved with setting up with the Society of Biology the **Accreditation Scheme**.

What however was not achieved was any formal mechanism for The Society to ‘Speak for its members’. Nor had anything much happened regarding liaisons with other like-minded organisations – either at home or abroad. Particularly disappointing were the failures regarding closer relationships with veterinarians and with Societies of Animal Science worldwide.

The Strategic Planning paper ends “Failure to action previous plans has often been due to BSAS depending upon a decreasing pool of increasingly time-constrained office bearers.” It has often been remarked that the Presidents and the Committees of BSAS are quick to propose actions that might benefit the Society, but the actual delivery of these opportunities is poor. It is evident from the experiences following the action plan that success is likely only when an individual is identified to complete a particular task and is recompensed for the time spent in carrying it out.

In 2013, President Peter Williams revisited the 2011/12 strategy. The Society is reminded that what should come first is those things it does best (and easiest; mostly through the permanent Office staff). These are (i) Publish scientific literature with EAAP and INRA (**ANIMAL, Advances**, etc.), and (ii) Run the Annual Conference and other Occasional meetings and Workshops.

In 2015/16, President Alistair Carson, asked Colin Whittemore (again!) to do a further ‘Strategic review’. This would take the form of a wide-ranging survey of all BSAS members, and the setting up of eight special groups to consider specific topics. It was not a trivial task! (But then neither was the 2011 operation).

In that last review, the members re-asserted that for them BSAS was about the Annual Conference and the other meetings like the workshops. They wished more symposia sessions with outside speakers and more industry-related content. They were in agreement with the Society moving faster towards conducting its affairs in ways akin to a ‘Professional body’. They were looking for BSAS to be a more influential voice amongst ‘policy-makers’. Members saw the **Accreditation Register** as an important part of fostering ‘Professionalism’, but regretted the lack of any Governmental *imperative* for animal scientists to *require* certification just as do other like professionals.

The most persistent and forcibly put message from the membership was however that BSAS did not communicate with its members well enough. Not just about its activities, but also about what was going on in research, technology and knowledge transfer. Neither did it communicate well on behalf of its members with the outside world of industry, politics and policy. In brief, it was not behaving like a ‘Professional Society’! More resources were needed to be put into communications; both persons, and information technology. This resulted (in due course) with the appointment of another member to the **Communications team**, and a stream of Facebook, LinkedIn and Twitter feeds, as well as snappy items on the (to be modernised and upgraded) **BSAS Website**. The ambition for the website was that it should be the regular ‘go to’ place for all BSAS members. The usefulness of the web site for communicating conference activities (e.g. by **videoed presentations**) to those unable to attend, especially overseas members, is clearly evident. Many of these initiatives are still in process of being satisfactorily developed.

Despite the ease with which the Society finds it can come up with ideas and solutions to its problems, there remains the all-pervading difficulty of getting things done by a volunteer workforce under extreme pressure from their ‘day-job’ employers. It is not the strategy *planning* – it is the strategy *actioning*! Where success has come (and the above account tells of some very real successes), it has often only been as a result of matters being taken forward by individuals highly motivated toward the well-being of the Society.

### **The Associations**

The **Academia Association** and an **Industry Association** were set up in 2013 to involve respectively the University Post-graduate community and the Animal Industries (especially Feed) in working closer with the Society. Each have about 15-20 corporate members, each member with their own representative (or ‘ambassador’). The **Industry Association** has been key to creating industry-useful sessions within the Annual Conference and encouraging post-graduate students to be ‘Industry aware’. Industry has seen the Association as a fertile recruiting ground, and has created strong liaisons with their sister Association. Through IA, BSAS has been able to act as a broker helping to bring together Academia and Industry to secure funding within the Government Agritech programme for CIEL.

However, little progress had been made with regard to linkages with other like-minded overseas organisations. International outreach was judged ‘poor’ in the 2016 review. The call for action resulted in the setting up of the **Global Association**. To date there is no evidence that this ‘Association’ (in contrast to Academia and Industry) has had any beneficial effects.

Left pending, however, is the matter of the involvement of the veterinary professions. If the BSAS was a Society for the Animal Sciences, how was it that there were so few members with direct interests in animal health? The inclusion of those in animal health research, teaching, technology transfer, and practice was called for by the 2016 review as a matter of priority for all parts of the Society – organisers of conferences, planners of workshops, members of Associations...

### **Accreditation**

As a part of ‘*developing the benefits of membership through the Society having a governance role in maintaining science standards and integrity*’, tentative exploration of various CPD schemes was suggested; it was noted that the Nutrition Society had one such. In 1999 BSAS Council (with CW in the Chair) had opined that “CPD was one area in which the Society might provide Accreditation, and Cled Thomas was asked to look into the matter. A few years later another report was asked for, the objective of which would be to provide evidence to the effect that such schemes were neither beneficial nor necessary! Unfortunately, the report’s author (CW), whilst confirming the shortcomings in many existing schemes, came to the conclusion that a CPD-based Accreditation scheme was a rather good thing for professional animal scientists to belong to. As for example was already the case for veterinary surgeons. Further, an Accreditation scheme for all professionals was urged by the Government of the day, and BSAS was well placed to deliver. As is normal, the strength of advocacy of the report’s writer ensured that it would be he who would get the job to do!

In 2012, a potential scheme was outlined to the Society that would be run with, overseen, and audited by, the Society of Biology (the newly constituted replacement for the defunct Institute of Biology) and through SB by the Science Council of Great Britain (giving international and independent status to the scheme).

The *Royal Society of Biology & British Society of Animal Science Accreditation Register* was to be available to be joined at either Certified or Associate level, and as an Animal Scientist or an Animal Technologist (with appropriate post-nominals). Continuing Profession Development was to be embedded as an integral element of the scheme.

The scheme would become fully functional by 2014. Early problems with the on-line applications interface would involve a large (unnecessary) administrative burden, but would be resolved by 2016. Thus was created a substantial new dimension to the business of the British Society of Animal Science. To administer it the **BSAS Accreditation and Governance Group** was formed. The taking of responsibility for the *Certification of competence* – not just for its members, but also for the wider Animal Science community – represents a landmark step in (i) the Society acting as a *Professional organisation* in the wider world sphere (as opposed to being simply a body running conferences and publishing scientific literature), and (ii) the Society giving its members additional benefits of membership.

### **Committee Frameworks**

At its beginnings the British Society of Animal Production was a gathering of like-minded people; a Club. But soon it had accumulated funds that required accountability. The British Society of Animal Science had become a Registered Charity in Scotland in the 1980s. Properly constituted organisations require responsible persons named as accountable for their governance and conduct. There being no management structure as such, this function was taken on by the Council. BSAP Council was formed in 1978 (J.M.M. Cunningham in the chair). The named members of Council became the Trustees responsible to the Charity Commission for the conduct of affairs – Council being appointed by the Membership at the Annual General Meeting.

Before the appointment of a CEO (Mike Steele in 1989), the affairs of BSAP were managed by the Secretary as the only post with presumptive continuity. The Office effectively saw to it that things happened. Toward the Society's middle years, meetings would be organised by members most interested in holding them. Programmes for Winter and Summer Meetings came to be organised by a 'Programme Committee', the Journals were looked after by the Publications Committee (aka their Editors), Ideas came from the Technical Committee, while the Council presided over all, chaired by the President. The only 'statutory' bodies making up the Society were the Council as Trustees, and the AGM. All the other committees could come and go at will!

Subsequently it was decided that the Council was too large a body to be held responsible as Trustees. In the 2000s this body was reduced to the four Presidents (Past, Current, Vice, Junior Vice) and the Treasurer. In 2017 this was judged too few people, so in future there will be added back a small number of members of Council.

Come 2005 there were 3 standing Committees in addition to Council; Programme, Publications, Technical & Ethical. Arrangements for the Journals changed through the early 2000s, with **ANIMAL** and **Advances in Animal Biosciences** coming to be handled by their own administrations (with BSAS representation) and the publishers (Cambridge University Press). In 2009 Publications had become 'Education and Communications Group', and there was a new Group – Marketing (short-lived, unsurprisingly).

The Strategy plan of 2011/12 suggested that the Committee structure was no longer fit for purpose. But the changes that followed do not appear (in retrospect) especially coherent. In 2011 T&E becomes Strategy and Innovation and will be the 'Ideas (for Conferences) and Development (strategy) Group', also attending to relationships with other Societies, and reviewing scholarships, awards and prizes. By 2016 it was noticed that the main item here was now being done by the Presidents' Committee, the second (relations with other societies) did not seem to have a mechanism for its enactment, leaving only the last function.

In 2013 the Education and Communications Group became the Communications Group. A new Stakeholders group is formed which mostly concerns itself with the affairs of the Academia and Industry Associations. By this time, organising the activities of BSAS employed a secretariat of four staff, (Chief Executive, Senior Executive Officer, Executive Assistant, Finance Officer) and a number of dynamic (as in short-lived) working groups/committees made up of office bearers and staff. These are Council (the main representative body of members), Science and Technical Events, Strategy and Innovation, Communications, Stakeholders, and Accreditation. The President's Committee was started to provide continuity-support to the current President from the other three Presidents (past, next, and next after), the CEO and the Treasurer. It was soon found helpful to add into this group Chairs of other Groups (giving co-ordination between Groups). The Presidents' Committee became the effective forward planning group for the generation and implementation of operational strategy. Presidents' had the unhappy knack of duplicating the work of other committees (including Council); however, it seemed to get some things done!

So who runs BSAS? The Society has four imperatives in its bag of things to be done: Conferences and Workshops organisation, Publications, Accreditation, and Awards. Fiducial responsibilities lie with the Trustees, backed by the Council and the AGM. Functional operations are delivered from the Office (now including the Communications duo and

the Accreditation Executive) and from the CEO. Delivered to the AGM in 2018 were the reports of the CEO and the Hon Treasurer, and the activities of Science and Technology Events, Education and Training, Communication, Stakeholders, Accreditation and Student's Council.

## Concluding reflections

In reading through the volumes of archived papers generated over 75 years, one cannot help but suggest in the past the membership was more committed and pro-active; less pre-occupied with the trivial round, the common task. Within working hours' time was put aside to spend to the benefit of the Society.

In the 60s, 70s and 80s, BSAP Committees and members were busily forming *ad hoc* groups to respond to consultations and to lead in initiating National level discussions in matters such as breeding targets, feed requirements and safety, and animal welfare and management. BSAP opinion was sought as a professional body whose position on livestock issues mattered, and was considered by others to have a significant voice. Those 'others' included Government Ministers, Senior Civil Servants, Industry leaders, and professional groups (such as the Vets and the Institute of Biology). The Society was outward looking and international in its demeanor. It was, in a word, *important*. So also were its Conferences and its published organs; such as the Proceedings, Animal Production, Occasional publications. BSAP *led*.

For all its re-named Committees and Initiatives not only is there much unfinished business pending in this 75th year of BSAS, but it is not obvious how this business is to be completed within the society's current framework.

Looking inwards at the Society, it is not for the want of knowing what needs to be done. In the modern era it is for the want of incisive people with the time to do it. That, above all things, is what has changed in 75 years.

Looking outwards, what has changed is that the imperative to feed hungry mouths and foster the second agricultural revolution has long gone. So what is the British Society of Animal Science to be for?

Perhaps most importantly is the Society's part in Information Transfer and Information Exchange through science publishing; of proceedings, symposia plenary papers, original research and development. But here there are issues to be addressed. The science *generating* community is well served by modern day publishing, but the science *user* community is not. This was a major reason why the Society was formed 75 years ago, and maybe it is time this matter be re-visited. Science publication itself is changing with the digital age, and in future the Society will need to plan without an income flow from this source. BSAS has a voice on the Consortium Board for **ANIMAL** and **Advances in Animal Biosciences**, but in the absence of a Publications Committee, the means by which ownership and influence upon the development of those publications (so vital to the future of the Society) is now insecure.

Is the Society to be seen as an appropriate Professional body for pursuing the interests of its members? If it is to do this directly then substantial investment is needed to fund public outreach in all its forms and to all sectors. This will require an expanding membership – a virtuous circle of expanding subscription income being spent on expanding services. The Society may choose to action this element of its work in-house, or expend more energy in making other organisations (such as the Royal Society of Biology and EAAP) work more effectively on its behalf.

Incontrovertibly, BSAS has to be for the organising of conferences and workshops, at which it is very good. Further, the Society is developing new mechanisms for the promulgation of the outputs from such events using modern technologies. Perhaps this will be the way in which the issues of the future be addressed.

## Sources

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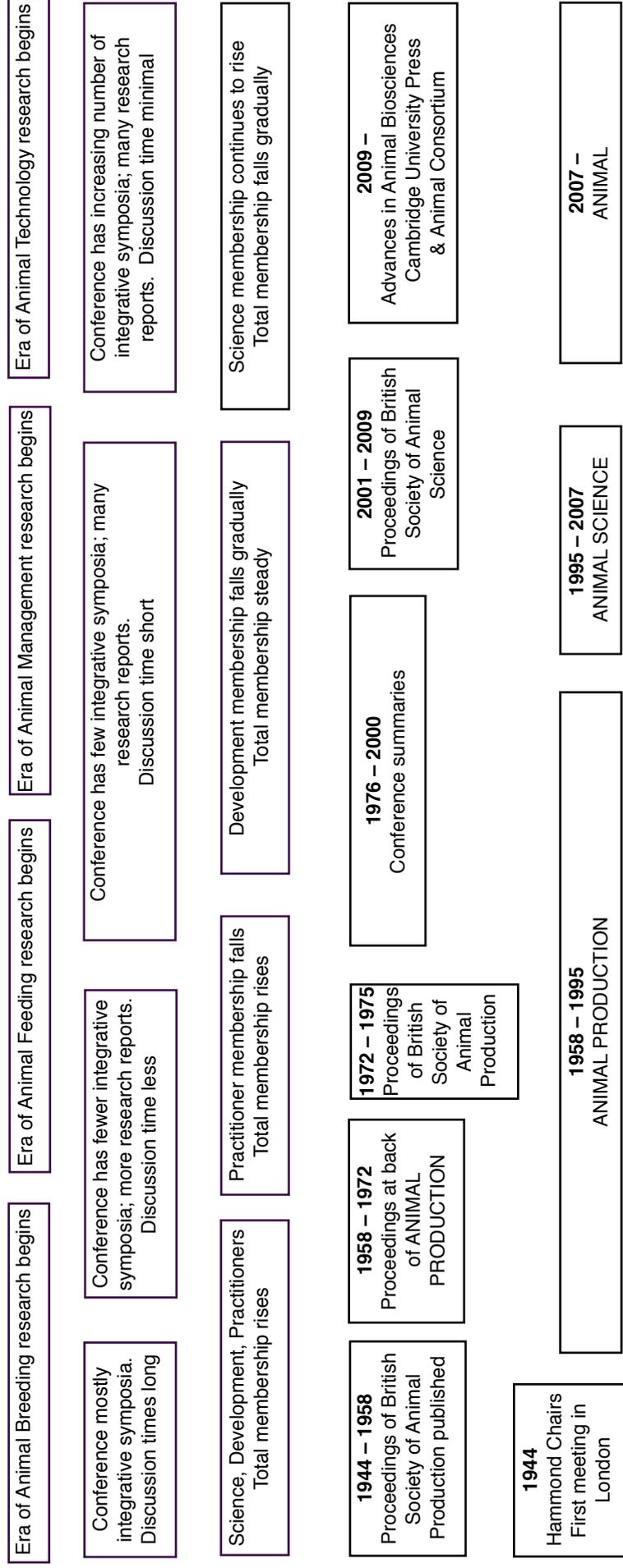
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## British Society of Animal Production / British Society of Animal science 75-Year timeline 1944-2019



**1944**



**2019**