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Chapter 11

Scientists as Publishers: The Company of Biologists Ltd.

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What is the Company of Biologists?

The Company of Biologists is a Company Limited by Guarantee, owning, printing and publishing three, fortnightly, international journals. These journals publish primary research articles in the field of biology. Their combined extent amounts to approximately 13,000 pages a year. The Company has, at present, 14 Directors all of whom give their time free. Almost all of them are active professional biologists. It is they who bear the responsibility for making policy decisions about the Company. The Board of Directors, though it meets together formally only four times a year, is organised into advisory groups — such as the Charity Policy group, the Investments Group, the Future Directions Group. There is also an Executive Group that meets monthly, and is chaired by the Company chairman. Three other Directors are also members of this Group, as is the production manager, the accounts and sales manager, the investments manager and the Company Secretary. The Company accountant is normally also in attendance.

The Company uses 'awaydays' on particular topics of concern as occasions when Directors, managers and staff can, together, generate new ideas or new ways of shaping the strategies of the Company.

The Company has been a registered Charity since 1952, when it was incorporated under the Companies Act. It now provides financial support to three major biological Societies and various conferences in the field of its journals. It also offers Travelling Fellowships worldwide to junior research workers who need to travel to laboratories in other countries to learn new techniques. Such fellowships are highly competitive and are awarded by the Editors of the Journals.

History of The Company of Biologists Ltd.

The Company of Biologists Ltd was founded in 1925 through the efforts of one man, in order to rescue a new journal that was failing. The man was George

Parker Bidder, a biologist, an authority on sponges, and a businessman — a director of the Cannock Chase Colliery. Among his many activities was (in 1889) to buy and run a hotel, "Parkers", in Naples and to provide accommodation for visitors to the Stazione Zoologica at Naples. On another occasion when Bidder was commissioned by the Government to carry out a long-term survey of the North Sea — for which he was paid a grant to hire a boat, he characteristically bought a boat, completed the survey, sold the boat for more than he paid for it and used the surplus to endow the "Ray Lankester Investigatorship" at the Marine Station at Plymouth (Ray Lankester was his teacher). A favourite phrase of his was "It has often occurred to me to wonder…".

The journal was the ailing, two-year-old *British Journal of Experimental Biology* published by Oliver and Boyd in Edinburgh. The Journal's existence was crucial for the developing new subject of Experimental Biology. Sir James Gray in Cambridge, as an important developer of this new subject, was particularly concerned.

Bidder called on friends, including Julian Huxley, Lancelot Hogben, J.T. Saunders and F.A.E. Crew to be Directors, while others became shareholders and "Members" of the new Company. Funds were needed to purchase the journal from the owners. An indenture, signed by F.A.E. Crew, sold the journal to the new Company for £150 on 14th November 1926. The Shareholders paid £5 but were liable for a total of £10 should the Company go into liquidation. At the time of the first statutory meeting in January 1926 there were 38 'Members'. Bidder, as chairman, approved Gray as the Editor of the journal and moved the publication to Cambridge University Press where, renamed as *Journal of Experimental Biology*, it remained for more than 50 years. Within two years the journal broke even financially with a profit of £3-8s-5d and even during the war it continued to be produced despite shortages of paper. Bidder later, in March 1946, gave the Company the *Quarterly Journal of Microscopical Science*, complete with Editors paid up to 31st January 1947. This journal had a long history dating back to the 19th century, and a rather cramped and meagre format. The Company re-founded and redesigned it in 1966 as *Journal of Cell Science*.

In 1952, for tax reasons, the Company, despite certain misgivings from Bidder, became a registered charity and its Memorandum and Articles of Association stipulated that each journal should have one Editor, with whom the Company dealt, and that that Editor had full and complete responsibility for what scientific matter was accepted by the journal. In other words, the Company, though made up of biologists of distinction, specifically disenfranchised itself from interfering in what went into the journal. The Company appointed the Editor, set the price and extent

of the journal and monitored its finances, but otherwise "The Editor" was in control.

The Company in 1953 accepted the gift of yet another journal, this time with the catchy title *Journal of Embryology and Experimental Morphology*. This journal had been run by an Editorial Board who appointed three editors, each serving for three years and each in turn becoming senior editor in their final year. This arrangement meant that there was no ready authority to make long-term changes. The Company's policy of one Editor (or Editor-in-Chief) appointed by the Board of the Company, was clearly incompatible with an Editorial Board who appointed the editors, each of short tenure. In 1978, in order to bring the journal into line with the other journals of the Company, Professor D.W.T. Crompton, Company Chairman, asked for and obtained the resignation of the entire Board of JEEM — as the journal had come to be called.

Thus all three journals moved to production at the Cambridge University Press. Apart from the Board of Directors and editorial staff the Company consisted of only three part-time staff, i.e. a Company Secretary, a Financial Secretary who handled all the investment plans and expenditure, and a secretary. In the early seventies the job of the Company Secretary was described as "one hour a week".

With the spectacular success of *Cell* under Dr Benjamin Lewin, which achieved publication times of three months, rather than the nine or so months that was offered by Cambridge University Press at that time, Editors began to press for faster publication. It was the clear thinking Editor of *Journal of Cell Science*, Dr. A.V. Grimstone, who pointed out to the Board that the reason for the slowness of publication of the Company's journals was the time that they spent, at each stage, waiting their turn to be processed. Since there were many processes, there were many delays. He proposed in a letter to the Board dated 11th July 1979 that the way out of this situation was to employ staff who would give the journals their exclusive attention, so there were no delays. The idea that the Company should have its own printing house shaped the thinking of the Board, but for a couple of years the journals were entrusted to a forward-looking printer in Scarborough, Tom Pindar.

It was he who suggested in 1980 that the best way to manage the journals was for the Company to use two trained typesetters in Cambridge, whom he selected. Starting in 1982 they worked full-time on what were, in effect, word-processors. They then sent their discs to Scarborough along with the artwork for proofing, and eventual printing. At this time the Company's journals at Cambridge University Press were all being printed using hot metal — the change to offset lithography would not be for a further year. The system with Pindars worked well, but again, as with most major printers, delays at the printing house, though much less than

before, were significant, to the displeasure of the Editors.

One highly significant concession that Cambridge University Press had agreed to in September 1977, was to pay the subscription money for the journals, after one month's delay, to the Company. The Company achieved even better terms when we moved to the Biochemical Society for distribution in January 1984.

The standard offer that we had originally accepted from Cambridge University Press as logical, was to be paid, at the end of the year, what remained of the subscription money for that year after all expenses had been deducted. With the new arrangement, interest would be earned on the subscriptions and, with luck, some money would be earning interest for a large part of, or for the entire year. This significantly improved our financial position, and made it feasible for us to hire premises and to employ technical staff and to purchase equipment. It must be stressed here that the very significant investment skills of the Financial Secretary, Dr S.H.P. Maddrell, FRS gave the Company the confidence and the cash to make some impressive and successful leaps of faith.

It is important to remember the conditions in the early 1980's when, with the increasing pressure from two of the three Editors, the Company moved to Pindars. Many typesetting and printing firms were being bought by entrepreneurs and stripped of their assets, leaving excellent staff unemployed. This was exacerbated by many printing works going into liquidation as hot-metal was replaced by offset litho and computerised typesetting. As the Company took over more and more of the production of its journals, we were astonished at the pool of highly skilled staff, eager to work to the highest standards, that we could employ. Many of these still work for us.

Although the print unions, particularly the NGA and Sogat 88 in London were locked in restrictive practices, the East Anglian branch of the NGA was always extremely helpful to us — they really knew each of their members individually and could tell us of their particular skills.

One trigger for going beyond the simple preparation of disks for Pindars was the discovery that equipment that was repossessed by the bank when a local typesetting works went into receivership could be purchased for a 'derisory sum'. We therefore found ourselves the proud owners of an industry-standard typesetter — a Linotron 202 that we initially had no plans to use, but which, after a while seemed worth trying out. Our initial approach to the Linotron as a 'toy' was rapidly taken over by those who really knew how to drive it. For five years the equipment produced all our journals, after which, in true Bidder style, we sold the Linotron for more than we paid for it!

Since October 1983 it was clear that, eventually at least, biologists would rou-

tinely send us word-processor discs, so we agreed to terms with our union, the National Graphical Association, that we would sign an agreement, known as the RAGA (Reproduction And Graphics Association) agreement under which union members were permitted to insert typesetting commands so as to set text directly from an authors disc, provided that all union members in the Company were paid at an enhanced rate.

We were also very fortunate that we had three journals that we owned. This meant that there was enough throughput (then 1000–1300 pages/journal/year) to justify setting up on our own, and we could make sure that there was a continuing dialogue between editorial staff and production staff to achieve greater and greater production efficiency without compromising the standards of either side.

As biologists, we knew that biologists worldwide, were already, in the early 1980's, using word-processors, particularly Apple Macs, so, we asked for disks to accompany the manuscripts. Everyone, including authors, applauded such a move — but it sometimes took substantial pressure and telephone calls to convince authors that we really did want the actual disk on which they had typed their article! Although biologists, predictably, used a wide range of word-processing and other programs — unlike physicists who, very early on, had standardised on TeX and LaTeX, our typesetting staff found and used an increasingly wide range of programs to convert most discs into a standard production program. Our staff also became increasingly experienced at unpicking the results of an author using a standard program in a highly unorthodox way. Thus an author's printout on a laboratory printer might look perfectly satisfactory — until it is reproduced from disk onto a film that shows the true thinness of the line, only to discover that the line specified is only a few wavelengths of light thick — the lab printer simply printed the line as thin as it could!

Despite these propitious conditions it was an astonishingly brave move on the part of the Board to authorize first, the purchase of a Heidelberg SORS single colour printing press. They then, when it was clear that the advice we were given to keep printing and typesetting departments completely separate was wrong, authorised us to go out and buy a factory on the outskirts of Cambridge. This was opened in October 1985 by Dr. Anna Bidder, the daughter of Dr. G.P. Bidder and herself a zoologist of great distinction, and was named the 'Bidder Building'. The merging of the complete production system into one continuous process on the advice of our production manager, combined with flexibility of working practices from our production staff has enabled us to remain efficient.

One early experiment that we tried while we were at Cambridge University Press, but that failed, was no ones fault but our own for not taking full account of

human nature. As biologists, we knew that journals taken in a library disappeared "To the Binders" for long periods of time — a very substantial inconvenience to users and an expense to librarians. We therefore negotiated very good terms with the Press to put our journals directly into a proper case binding (with buckram), thus endearing ourselves to librarians. What we had not bargained for was that librarians, on receipt of case-bound monthly volumes, placed them directly onto the library shelves, rather than into the display rack of latest issues — so our journals became instantly invisible on delivery to libraries except to those that searched the shelves archivally!

The flipside of this experience was that we asked our printers to print the covers, with four-colour pictures, since they enjoyed the variety involved in running the covers four times through the huge single-colour press that we owned. They found that with just a small amount of overtime they could print four-colour sheets for the journals that could be tipped in by hand when the volumes were bound. In this way, we were able to offer (and still do!) free colour to our authors. Of course, free colour became so popular with authors, that tipping in a large number of plates became prohibitively expensive. The alternative was to purchase two, two-colour presses that print colour in-situ, though our editorial staff do try to place colour when possible so that it falls propitiously for printing as well as for relevance.

We also experimented at Cambridge University Press from 1982 onwards with the numbers of offprints offered free to authors. We innocently thought that 200 offprints were probably enough to satisfy everyone and if we offered these free to the senior author of each article, we suspected that everyone would be pleased and we could give a standard order to CUP for the numbers required. We felt that this should allow us to negotiate better terms for printing, with a fixed run-size. Alas! Human nature merely accepted the 200 free copies and then added to that the strange variable numbers that authors use in their offprint order forms. We nevertheless continued to offer 200 free offprints to authors for many years.

A more successful experiment initiated on 29th April 1983 was to pay referees if they returned their reports on articles within two weeks. The going rate was £15 or $25. It is apocryphal that the fee could, if the referee were local, be commuted to a bottle of whisky (option now discontinued), but the fee can be accumulated to buy an individual subscription to a Company journal or book. The effect was magical. Traditional laggards got their reports in on the dot, with pleas for clemency on account of the vagaries of the post. Although the sum offered has not been increased, it still has a major impact on the return of reports and hence on publication times. On the other hand, it is a major expense, with some 3,000 articles submitted each year and each article needing at least two referees, but it is clearly

appreciated as a token by overworked referees.

When we moved into our Printing House, it seemed much too large for our needs. This was an inducement to us to undertake our own distribution and to use our spare space as warehousing for distribution. We were encouraged to go ahead with this scheme by the officers of the Society for General Microbiology who pointed out to us how straightforward it is, at least, conceptually. We realised that one doesn't actually need to know precisely which libraries worldwide are taking our journals, for agents act as intermediaries. We, and others, also found to our surprise just how often libraries, that we had innocently thought of as pretty permanent, do change their addresses (and their agents). It has been a huge bonus to us to do our own distribution now that we are able to consolidate more and more information about which libraries, where, take our journals. We are thus in a strong position to negotiate with consortia, for our software can coordinate geography, numbers of libraries, journals and agents.

Not all our enterprises, of course, have been successful. When, early on, we bought some desk-top publishing equipment that was recommended by an organisation that had not used it under daily production regimes, we were told by the manufacturers that our troubles with it must be due to electrical spikes on our mains supply or operator errors. We found neither to be the case. The manufacturers would not divulge the names of their customers who were "finding the equipment so satisfactory" but we chanced to meet one who confessed to being as worried as we were about the way the equipment behaved. It took a visit to the High Court, followed by calling in the sheriffs, to get our money back (with costs), even though that had been promised in the High Court. We try not to deal, now, with firms who make it a principle not to say who their customers are. For a horrific six months while this was going on we had to use print-farming around Cambridge to cope with the increasing overload from the three Editors (who by chance had all allowed extent almost to double over that fraught period).

The Company has certainly benefited from links with the two Universities in Cambridge, particularly in relation to obtaining advice from experts. Thus in our High Court case over desk-top publishing equipment, we had expert advisors available from the Computer Labs in Cambridge. Moreover, when we needed to set up our Web-site at the Bidder Building, that is located at the back of beyond, and had no prospect at that time of fibre-optic cable being available, Professor Schnurr of Anglia Polytechnic University convinced us (and was quite right) that we could use a 2Mb/sec microwave link into his University, and thence into the main University network SUPER JANET. We also obtained a superb Webmaster from the Department of Chemistry, Cambridge, who was used to modelling maps of the changes in

atmospheric chemistry. The system that he set up almost runs itself automatically provided that the journals do not change their format or their requirements significantly.

Our experiences have confirmed Bidder's original view, that an editor is the key figure in the journal and can make or break a journal (unless the Board intervene before it is too late). We were informed by one of our most distinguished Directors that our uncomfortably-named journal JEEM (what is Experimental Morphology anyway?) could be poised with a window of opportunity, owing to one of its American competitors becoming staid, slow and pernickety. With free colour, a new name, a new Editor and a substantial redesign, JEEM has now become our flagship journal, *Development*. This was not only the skill of the Editor however, it was that the journal was in place as the subject took off, as the prescient Director had suggested. It caught a net-full of excited authors who all cited each others papers and happily used their free colour to good effect. Despite other prestigious journals in the field, *Development* is the most cited journal in *Development*.

Could others do the same in their field? Certainly, they could! We, however, were often very lucky both in the staff we were able to employ and in having an adequate sized portfolio of journals to justify 'going it alone'. Of course, others like *Cell* have done it with just one journal initially and again it seems to have been the Editor and their vision that made the difference. This may be a very narrow viewpoint, however.

Advantages of the present step-up

It has been Company policy to employ editors who are themselves active in the research area of each journal and it may well be that many potential authors feel flattered to know that the distinguished Dr. X or Professor X will see or decide on their manuscript. Of course, full time, professional editorial staff, skilled as production editors, staff editors or editorial assistants, are vital to the smooth running of the journals and each journal has a production editor based in the Bidder Building to deal with production queries or problems immediately. It is indeed a heady mix to have experts in all aspects of the journal production, sales, editorial, distribution and website, housed in the same premises. Thus when negotiating sales with library consortia, the full geographic implications of a consortium, the subscription history of the individual libraries, the web down-loadings of articles and the other journals of the Company that are subscribed to by the libraries are all taken into account, as well as knowledge of special issues of the journals and CD-ROMs that are available. Moreover it is the case that staff feel that their suggestions, expertise and particular enthusiasm or knowledge of opportunities can be immedi-

ately explored and implemented, if sensible or useful — an example would be the availability of free colour for authors.

The main justification for the present system is that it works and the journals are produced to an extremely high standard, on time and we are thus able to attract and disseminate important articles. It has also been Company policy to give the journals that we own absolute priority in production, so although we have produced material for other Societies, such as the SEB symposium series, *Journal of Molecular Endocrinology* for the Society for Endocrinology, and *BioEssays* for ICSU press, we have now exclusively, as originally envisaged by the former Editor of *Journal of Cell Science*, concentrated on our own journals. Thus time is not lost whilst articles wait their turn in a line made up of other journals that we do not own or control. The crucial feature of ownership is to be able to establish those rules for a journal that in our view are viable and are indeed an improvement on what went before.

Another major advantage of going "against the grain" and using our own production line and printers rather than simply print-farming for the best price, is the quality of production. Our staff know precisely the quality of production that is required by our authors. Our sales staff enjoy getting to know the librarians, who are the majority of our customers: forging a relationship that is usually better than is available through middlemen. All staff work to very high standards and take pride in their work. Separated from the pressures of shareholders, the Company has been able fully to develop its professionalism, and to operate according to the principles of best practice in its operations.