

# Sir Ronald A. Fisher and The International Biometric Society

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**SUMMARY.** The year 2012 marks the 50th anniversary of the death of Sir Ronald A. Fisher, one of the two Fathers of Statistics and a Founder of the International Biometric Society (the “Society”). To celebrate the extraordinary genius of Fisher and the far-sighted vision of Fisher and Chester Bliss in organizing and promoting the formation of the Society, this article looks at the origins and growth of the Society, some of the key players and events, and especially the roles played by Fisher himself as the First President. A fresh look at Fisher, the man rather than the scientific genius is also presented.

**KEY WORDS:** ASA and its Biometrics section; *Biometrics*; Biometry; Chester Bliss; Gertrude Cox; John Tukey; Ronald Fisher.

## 1. Introduction

In his letter of August 1, 1962 to the Editor of *The Times* of London following its report of Sir Ronald Fisher’s death, Chester Bliss, then President of the Biometric Society (later renamed International Biometric Society) wrote that

“the world of science (had lost) one of its most brilliant minds and colourful personalities.”

Bliss went on:

“One consequence of the Fisherian revolution. . . was the formation 15 years ago of the international Biometric Society. . . Its first President, he watched it grow. . . , it crosses the boundaries between nations and between scientific disciplines in living testimony to the unifying concepts that we owe to Sir Ronald Fisher.”

Through this one letter, Bliss captures both the extraordinary greatness of Fisher and the important role that Fisher played in the establishment of the International Biometric Society, simultaneously subsuming his (Bliss’) own critical role in its formation.

In this article, we trace the establishment and purposes of the International Biometric Society (IBS, the “Society”) and the seminal role played by our First President (later Sir) Ronald A. Fisher in its early years, as seen through the Society Archives. In recognition of Fisher’s death 50 years ago, this article will tend to focus on those aspects which saw Fisher contribute to the Society’s development; a more detailed history of the Society up to the present time will be presented in a later article by the author. As we travel this road, some key dates are:

- Ronald Aylmer Fisher: February 17, 1890—July 29, 1962; knighted in 1952.
- *Biometrics Bulletin*: started by the Biometrics Section, American Statistical Association (ASA) in 1945, and renamed *Biometrics* in 1947.
- The Society: formed at Woods Hole on September 6, 1947.

As a backdrop to Fisher himself, we remark, simply, that he was one of the two “Fathers” of statistics along with Jerzy Neyman, and also one of the two “Fathers” of genetics along with Sewell Wright, a truly extraordinary achievement.

## 2. A Society Is Born

### 2.1. *In The Beginning. . .*

The origins of the Society lie in the early 1947 publication of the preliminary scientific program for the upcoming session of the International Statistical Institute (ISI) scheduled for September 1947 in Washington DC. The ISI had drawn up a new constitution specifically designed to expand its purview beyond the previous focus purely on the governmental statistics roles that had defined the Institute from its formation, to include the interests of non-government statistics including biometry and biostatistics. However, to many, including Chester Bliss, this preliminary program effectively ignored the biometric and biostatistical community. In a fortuitous encounter on a March 29 train ride from New York to Princeton, Bliss expressed his concern about this development to the economist Charles Roos who opined that Bliss might want to consider what the economists had recently done, that is, form their own international organization.

Accordingly, 2 days later, March 31, 1947, Bliss wrote to Dan DeLury, Chair of ASA’s Biometrics Section, outlining his thoughts as to what might be achieved and how to proceed. In response to Bliss on April 8, 1947, DeLury set out the framework for action with a call to (1) organize an international biometric society, (2) arrange an organizational meeting and issue invitations, (3) prepare a report, so as to inform the ASA Board, and (4) prepare a provisional draft constitution. While DeLury was clearly on-board, his handwritten note in the margins asking Bliss if he (DeLury) had it right, makes it very clear that this is Bliss’, “your,” idea. In the same letter, DeLury appointed Bliss as Chair, Edwin deBeer, Horace Norton, and John Tukey as the initial organizing committee. Bliss wasted no time writing to this committee on April 15,

detailing questions to be answered, seeking input on a myriad of aspects. Three committee members met May 10–11, 1947, and decided to proceed. Bill Cochran, Churchill Eisenhart, J. W. Gowen, George Snedecor, and Sewell Wright, and L. P. Eisenhart, from the National Research Council (NRC) were added to the Committee. Gertrude Cox contributed prominently behind the scenes in her role as Editor of the *Biometric Bulletin* (see Finney, 1979, who wrote “Along with Gertrude Cox... (Bliss) nursed the infant society to vigorous growth”). Tukey sent Bliss a possible constitution on May 15, 1947. Others, for example, John von Neumann, were added in June 1947 to assist with organizing the International Biometrics Conference (IBC). By July 3, 1947, invitations to attend an international conference on biometry, the first IBC, in Woods Hole had been sent to 209 potential participants from 20 countries. By any measure, this was fast work indeed.

Of practical necessity, these early plans involved folk based in the United States; but not completely so. Fisher himself was actively involved. Indeed, at the outset, Bliss had contacted Fisher who in turn replied on April 14, 1947 affirming Bliss’ plans and concerns about the ISI; and followed up on May 30, 1947, that

“I (Fisher) think your plans are very good... (for Woods Hole).”

It was clear that Fisher was kept “in the loop,” and his opinions sought.

### 2.2. *The Homework Done*

The IBC was slated for Woods Hole on Friday–Saturday September 5–6, 1947. For IBC attendees to garner travel funds to come to a scientific meeting with no historical record would not be easy. With great vision and simultaneously considerable cooperation from sister societies, the organizers were most inventive at achieving these goals. The ISI cooperated by inviting foreign biometricians selected by Bliss and his team to the ISI Session scheduled for September 6–18, with the 6th kept free of important meetings. This allowed foreign participants to obtain travel funds to bring them to Washington DC. The Institute of Mathematical Statistics (IMS) scheduled its meeting for August 30–September 3, in New Haven, thus providing the means for US-based participants to receive funding to New Haven. Meantime, back on June 12, the Rockefeller Foundation had effectively offered \$1000 to cover train fares from and to New York for foreign participants along with other expenses such as printing, etc.

Thus it was that an expanded committee now including foreign delegates met in Bliss’ Yale office on the evening of Wednesday September 3 after the completion of the IMS meeting to review the proposals for (i) an international society, (ii) provision for regional and national subdivisions, (iii) a draft constitution, and (iv) a Council structure and authority to consist of 12–20 members. Other details emerged as the drama unfolded at Woods Hole. To quote Bliss (1958) himself

“our ‘homework’ had been done.”

While the Archives do not reveal any specifics, what they do show is a spring in their steps as the participants head off on Thursday for Woods Hole and the activities of the 2

days to come. The pages are throbbing with excitement and anticipation.

### 2.3. *At Woods Hole...*

As part of the opening session on Friday September 5, a business meeting elected G. Teissier, Fisher and Bliss as Chairman, Co-Chairman and Secretary, respectively, as “officers of the Conference.” After a scientific session, Fisher named a 12-person “Committee on International Organization” to consider what type of organization would be most suitable at the present time and to prepare/revise a draft constitution. This Committee met in the evening, having spent the day in active consultations, to revise and prepare the constitution for distribution the next day, that is, make mimeograph copies.

Saturday morning, the 6th, was devoted to discussing the proposals; in other words, the “homework” was being graded. Under the Chairmanship of B. W. Bronk from the NRC, C. E. Dieulefait for the ISI first spoke about international cooperation in biometry, the new ISI constitution, and suggested affiliation with ISI for “the society that might be formed this morning.” Then, Fisher submitted the report of the Committee on International Organization which recommended the formation of an international membership society. This recommendation was adopted.

Then, Maurice Belz an Australian delegate assumed the Chair, as the assembled (not yet, but soon, to be defined as) “charter members” considered the draft constitution, article by article. The Minutes of this session contain pages of back-and-forth debate and discussion. We focus on just two issues here, viz., the inclusion or not of “international” in the name, and the terms of office.

The question of the name generated a lot of discussion. Should the name reflect the society’s international scope? If the international moniker was omitted, then should there be a sub-name to reflect this aspect? Tukey won the day with his arguments for brevity, even to the extent of deleting the “s” on “biometrics,” and so the name selected was “The Biometric Society.” The sub-name subsequently adopted at the Second Council 9 days later was “An International Society Devoted to the Mathematical and Statistical Aspects of Biology;” so much for brevity! It did not take long for the Archives to suggest, by implication, a form of regret that the word “international” was missing from the name, if the numerous allusions and efforts to convince relevant letter recipients that the society really was international in nature, are any indication. Indeed, even in his letter to *The Times* on Fisher’s death, Bliss refers to Fisher’s impact on the formation of the “*international* Biometric Society” (emphasis added); see Section 1. These difficulties evaporated in 1994 when Council approved the inclusion of the term in the English version of the name, in line with the French and German versions which had always included the “International” descriptor, and also to avoid confusion with a different Japanese “Biometric Society.”

Another issue dealt with tenure of office. The draft constitution held that there be a maximum of two terms for any position or appointment. This article was endorsed wholeheartedly except for the secretary position. The discussion made it clear that this was not because it might be hard to find capable people for this position but, to the contrary, it

was felt that the default for any and all positions would be an automatic extension to a second term. Thus, if a secretary was proving too fallible, it would be difficult to deny that person a second term. The members wanted to be able to replace the not-so-suitable secretary as soon as possible, that is, after one term, and not to have to wait for the “obligatory” second term to have transpired.

Although this non-limit was approved for the secretary position, the two-term limit was always followed. Even Bliss who led the drive to the formation of IBS was humble enough to know no one is irreplaceable, limiting his own tenure as Secretary to but two terms. Indeed, in a 1953 letter Bliss wrote

“... It is the policy of the Society to rotate (such) posts periodically, both to avoid imposing too heavily on the time of individual members and also to bring a larger number of members into the active operation of the Society...” (emphasis added)

Bliss, Tukey, and the other committee members, in addition to a keen sense of their own limitations, also had a keen sense of Fisher’s historical place in science, in statistics, in genetics, making Fisher the first President, not themselves, as we shall see shortly. Interestingly, it was not until 1962, 15 years later, that Bliss finally acceded to serve as President, its eighth; in a wry poignant twist, he was President in 1962 when Fisher died.

On Saturday afternoon, still September 6 1947, sitting as The Biometric Society for the first time, the Constitution was approved unanimously. Delegates went back to scientific sessions for the rest of the day; one has to wonder what level of concentration was being exhibited.

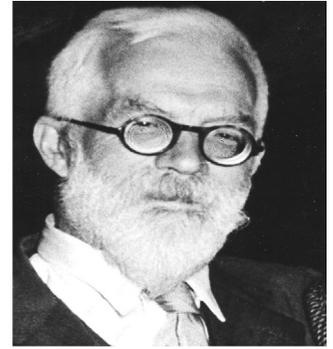
After the IBC had been formally ended, the First Council meeting was held—still Saturday, September 6 1947! The Committee of twelve appointed the previous morning under Fisher’s chairmanship, along with three other delegates, became the First Council: Fisher (UK), Bliss (US), Hopkins (Canada), Belz (Australia), Bose (India), Bronk (US), Gertrude Cox (US), Dieulefait (Argentina), Haldane (UK), Linder (Switzerland), Neurdenburg (Netherlands), Rasch (Denmark), Teissier (France), Tukey (US), Wilson (US), with three Vice-Presidents DeLury (US), Mahalanobis (India), Trevan (UK). The Council elected its first officers, Fisher as President, Bliss as Secretary, and Hopkins as Treasurer. Council accepted Gertrude Cox’s proposal to make space in *Biometrics* available for the Society; more on this later in Section 3. See Figures 1 and 2 (and Web Figure 3 in Web Appendix D, Supplementary Materials).

#### 2.4. Nine Days Later

Nine days later, the Second Council meeting was held in Washington DC on September 15, 1947; notice this is in parallel with the ISI session. Seven more members were added from the biological sciences. Also, Charter membership was extended beyond those present at Woods Hole plus those invited but unable to attend as approved at Woods Hole, to anyone joining the Society by February 1, 1948. One item of business dealt with the afore-mentioned sub-name for the Society. Another dealt with determining dues—set at \$4 per member. The primary business however on this occasion was to set up a skeleton regional organization, starting with British, ENAR,



Chester I. Bliss



Ronald A. Fisher

**Figure 1.** Bliss and Fisher—Key contributors in the early days.

Indian, WNAR, and At-Large Regions. Each region had some level of autonomy, paid dues to the international society but could retain a portion for its own local expenses, organized its own scientific programs, yet belonged to and had the support structure of the international body. This regional structure distinguished the Society from other international societies with an international rather than national membership; indeed, as Finney in a 1952 communication so passionately said,

“We are an International Society, not merely a federation of National Societies.”

Thus, after a whirlwind 6 months of frenetic activity, our Society was born. The outstanding immediate concerns were to find a suitable Executive Assistant to the Secretary and to generate sufficient funds to support the nascent body. These were duly solved in early 1948 when a Mrs. Watkins, wife of ENAR’s first Secretary, set up “shop,” that is, a desk in her living room; and when the Rockefeller Foundation approved a \$7400 grant over 3 years 1948–1951.

### 3. Biometrics

Because the ASA was unable to meet due to World War II, its Biometrics Section started the *Biometrics Bulletin* in 1945 as a bi-monthly newsletter to communicate items of interest to its members. Shewhart (1945), then ASA President, in acknowledging this new outlet summarized the current situation with

“The launching of the *Biometrics Bulletin* is a logical step not only in fostering contacts between biologists concerned with statistical information, problems, and methods but also in stimulating research and in elevating the standards of statistical work that should prove helpful in developing the profession of statistics.”

Gertrude Cox was appointed Editor by then Section Chair Bliss. The name was shortened to *Biometrics* with the 1947 edition. While it struggled in those early years, the publication of the three-article set by Eisenhart (1947), Cochran (1947), and Bartlett (1947) in the March issue of *Biometrics* made it a force not to be dismissed lightly. [As an aside, for anyone concerned with experimental design, in practice and/or in the



**Figure 2.** Woods Hole Attendees—Fisher 8th from left, front row (Bliss missing on the torn right-side).

classroom, these are still to this day essential reading.] The journal was being used as an outlet for Society publications.

However, it was felt that the Society needed its own journal (all *Biometrics* Board members were IBS Charter members). The new ASA constitution, with its changes in editorial policies which could impact the Society, was to take effect in January 1949. The question of where *Biometrics* might reside was discussed at the December 1948 Business meeting of the ASA Biometrics Section. Meanwhile, by late 1948, Bliss and Fisher were discussing policy proposals on this. Our Society's Council in February 1949 voted to begin negotiations with ASA to take over responsibilities of the journal. Fisher appointed a committee, consisting of Gertrude Cox, Hopkins, and Bliss, to work out details of implementation. In October 1949, the ASA Board voted "in favor" to transfer *Biometrics* to the Society once a string of consultations and approvals to be undertaken by the Biometrics Section, Council, polling of member views, reviews, and the like, had occurred. All this took time as letters were the usual form of communications back then, along with opportunistic use of other organized scientific meetings. Eventually, the requisite approvals and negotiations culminated in August 1950 with the adoption of a mutual block subscription agreement, with ASA members obtaining *Biometrics* for \$4 and Society members obtaining *Journal of the American Statistical Association* for \$5, for a 5-year period effective January 1950. *Biometrics* was internationalized in a variety of ways, for example, its Board was expanded to include international members. It was a real success, so much so that the rider that the journal return to ASA should it fail in those 5 years became vacant.

Later, through 1958, the Society started looking seriously at the reciprocal arrangement with ASA; Council approved a recommendation for discontinuance in August, and asked officers to communicate with ASA. By November–December 1958, there was a series of letters between ASA President Hoadley and IBS President Goulden focusing on this issue of dues for *Biometrics* for ASA Biometric Section members. There now seemed to be some misgivings about the implementation of the earlier reciprocal block subscription grants begun in 1950; it was now cast as having been one-sided, albeit unintentionally, with 26 Society members and 547 ASA members receiving each other's journal at a reduced rate, in 1957. By 1958, one consequence was that a Biometric Section member could obtain *Biometrics* for less than the dues for E/WNAR; yet many such subscribers erroneously believed they were Society members, among many other confusions.

There was also concern that changing this arrangement might cause hard feelings between Biometric Section members of the ASA and the Society; these fears in fact proved groundless. In the end, this mutual agreement with ASA was ended effective from January 1959.

#### 4. Formation of Regions and National Groups

A more complete history of the formation of the regions and groups will be provided in a later article by the author. Our window frame here is limited to the very first regions and to those where Fisher is known to have had a more direct impact, as revealed by the Archival record.

Since the annual ASA meeting was held in December 1947, the first region formed was perforce the Eastern North American Region (ENAR) arising out of the ASA Biometrics Section. The British Region (BR) formed soon thereafter in May 1948; Fisher's (1948) opening address was reproduced ("included for obvious reasons." said Mahalanobis, 1964, p. 252, in the In Memoriam issue of *Biometrics*); see Section 7. The Western North American Region (WNAR) was formed by members attending an IMS meeting in November 1948, following a Tukey initiative earlier in June 1948 ably assisted by Neyman.

After discussion as to whether there should be separate Australian and/or New Zealand regions, ultimately, an Australasian Region with Alf Cornish as its first President was formed in November 1948. This type of discussion also occurred in Europe over 1949–1950. Given its recent history, there were concerns about the unity of western Europe vis-à-vis regions and/or national groups in Benelux, France, Italy, Switzerland, and other countries; should regions comprise one nation, or more than one country, and the like. Eventually, in February 1949, the French members formed the Région Française of the Biometric Society and the Société Française de Biométrie where members of the second must also be members of the first so as to satisfy a 1901 French law.

In a comprehensive letter to Bliss in December 1948, Mahalanobis as its first regional President provided details for the formation of an Indian Region at an upcoming January 1949 meeting. There were draft by-laws, a plan for a training and educational course in sampling at the 1951 ISI meeting to be held in India, and ideas and suggestions for a "Yearbook" (which idea evolved into our Society's "Directory"); and Fisher was a key partner in arranging the Society's session on biometry at that ISI session. The Region was duly formed. However, in 1949 and 1950, a number of

currencies were devalued against the US dollar, with an unfortunate consequence that Society dues for members in those countries increased. As the Indian Regional secretary, Rao wrote to Bliss in 1949 seeking relief implying that members would move to the At-Large Region where dues were cheaper if relief was not forthcoming. Bliss explained that E/WNAR were already subsidizing their dues and that in fairness to all affected regions, it was not possible to reduce the dues for India. Thus the Region dissolved and members left to join the At-Large Region with a small number staying, now as a National Group. Bliss always hoped for the re-formation of a region in India, even writing in August 28, 1962, days after Fisher's death, invoking "the late Sir Ronald Fisher's frequent visits" to India, to re-form the Region as "a fitting tribute." It was however not to be, until 1989 when the Region was re-formed with Sukhatme, a member in the first incarnation, serving as the first President in the re-incarnation.

Threaded through these endeavors as background is the simultaneous occurrence of a scientific meeting of a sister organization. Thus it was that Fisher had gone to Brazil to generate interest in a region there. After the conclusion of an ISI meeting in Rio De Janeiro, participants gathered at Campanis July 4–9, 1955. Fisher talked about biometry and plant breeding. As ever, Fisher encouraged younger researchers (see Web Figure 4 in Web Appendix D, Supplementary Materials).

While the occasion of other scientific meetings certainly aided in the establishment of the Society, the leadership took every opportunity imaginable to encourage new membership. For example, to a reader who had asked Bliss a question regarding an aspect of a Bliss publication, Bliss replied

"... In view of your interest in these charts, I believe you would enjoy membership in the Biometric Society..."

Authors of articles submitted to *Biometrics* were invited to join. Bliss and Cox were frequent participants here. However, Fisher was also part of this effort, for example, in August 1952, Fisher wrote

"... I have just heard that some biometrical activity is brewing in Scandinavia..."

For all these initiatives however, nothing can remotely compare with Bliss' World Tour (at no expense to the Society), when he visited 30 countries from September 1961 to September 1962, giving lectures, explaining the value of and encouraging membership in the Society and assisting with the formation of regions and national groups. He was a busy correspondent with the ever-present follow-up letters after each visit.

## 5. International Affiliations

There was considerable activity involved with establishing affiliations with other international organizations. The first, naturally given the history behind the formation of the Society, was with the ISI in 1948. That there would be coordination of IBS sponsored sessions at ISI sessions was quickly approved, and continues to this day. Later, in 1958, the ISI strengthened the relationship with the formation of a Committee on Statistics in the Physical Sciences rather than to expand its mantle to a biometry section, with this effort led initially by Henry Daniels UK and Jerzy Neyman US.

Correspondence with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and some of its affiliated bodies, World Health Organization (WHO), International Council of Scientific Unions (ICSU), Council for International Organization of Medical Sciences, International Union of Biological Sciences (IUBS) among others, graced the archive pages. Letters sought cooperation, recognition, and the like; they requested funds. Indeed, the IUBS gave \$2000 to assist with the formation of the Brazil region; Linder, our second President was the 1955 IUBS Treasurer. It is possible to track the growth of IBS membership from these letters, for example, # > 500 (1948), "nearly 1000" (1950), #4000 (1976), ...

The affiliation with the IUBS is of particular interest. The IUBS in 1948 had invited the Society to provide input on a proposed new section (in IUBS) on biometry. Although the Society had been formally accepted as an "affiliate" member in 1949, the Society, led primarily by Bliss and Fisher, wanted more—they wanted to become part of this organization, especially since they, that is, Bliss and Fisher but also IBS members, were passionate about the use of statistics in biology. Fisher in a June 1948 letter to Bliss was sceptical that the IUBS members would see the role of biometry as he felt they should; he opined (see Web Figure 5 in Web Appendix D, Supplementary Materials)

"... it would be perfectly fatal to leave the interests of statistical methods in biology to a couple of biologists who may well have been occupied for most of their lives in resisting the use of statistical methods."

Furthermore, Fisher was really pre-empting the IUBS with his October 1947 letter to Bliss with a draft of a constitution for a biometrics section. Eventually, in 1952, the IUBS did create a new Section on Biometry; and our Society, the IBS, became that Section.

## 6. Cambridge IBC September 1963

Fisher died July 29, 1962. Michael Healy was now the Secretary, and he was also the Organizer for the next IBC slated for Cambridge in September 1963. By late August 1962, he had sent letters to potential session organizers with return letters coming in during September and October. On October 30, 1962, he wrote again to session organizers:

"I am very grateful to you for undertaking to organize the session on (topic)... (details, etc.)"

concluding with:

"we want to open the session with a short article on Fisher's contributions to (topic)..."

There are no letters of objection, though sometimes there were follow-up questions relating to potential speakers for this contribution. As Alf Cornish said "The great man is gone" (see Web Appendix B, Supplementary Material), but no one it seemed was going to miss out on this opportunity to cherish his presence.

The invitees and the titles of their tribute to Fisher—Bliss (1964, medicine and bioassay), CR Rao (1964, multivariate analysis), Williams (1964, biology), Yates (1964, design of

experiments), Finney (1964, biometric analysis), and Mather (1964, genetics)—is a distinguished list of speakers indeed. Their presentations were published in the June 1964 issue of *Biometrics* together with three of Fisher's articles. As a companion to Mather's article, later, to celebrate the occasion of the centenary of his birth, Thompson (1990) has a wonderful article describing Fisher's developments to statistical genetics, juxtaposing Fisher's contributions alongside those of Wright and Haldane, thus unifying the two fields for which Fisher was a "Father."

So it was that the Cambridge IBC became a stage to honor Fisher, the scientist. How did the scientific world honor Fisher, the man?

## 7. Who Was This Giant?

Before addressing this question of just who this giant really was, may I digress with an addendum to relate that when Fisher died I had never heard of him and had barely heard of the discipline of statistics, even though I was born and being educated in Australia. Little more than a scant 6 years later, my formal training in statistics was behind me and I was an academic in England. To my colleagues in the UK, Fisher's memory was still fresh, and they were very happy to convey stories in abundance about this extravagant personality. For many, an abiding picture drawn was that Fisher was "difficult" and perhaps "cantankerous." While I took all this in, there was a piece of me in the back of my mind that wondered if this was but a manifestation of a person that was so passionate about his science, that anyone, everyone, should learn, know, what the correct aspect really was, and so forth. Reading Bennett's letter (see Web Appendix C, Supplementary Material) suggested this might be so.

This reality that there was indeed another side of Fisher grew as more of the Archives opened. Frank Yates worked many years alongside Fisher and probably knew him as well as anyone. His obituary in the September 22, 1962 issue of *Nature* sums up Fisher's personality and his legacy beautifully, in

"... a man of great charm, a brilliant conversationalist, cultured in the widest sense, and appreciative of historical values. ... a most stimulating scientific colleague... unduly sensitive to much of the unjustified criticism which his work, because of its originality, inevitably attracted..."

The August 11, 1962 issue of *Lancet* said much the same:

"Although often aggressive in academic controversy he showed great kindness and tolerance to students. He was accustomed to take much trouble in advising them... and would actually do much tiresome calculations for them."

The stream of accolades and obituaries is long; all attest to his greatness, his genius of course as a scientist, most also reveal him as kindly especially to young students and researchers, he really did want all to know the correct science. His impatience at those whom he thought did not want to know along with the "undue sensitivity" explained by Yates could easily explain the "difficult" descriptors of Fisher that have traveled down the years.

However, the ease with which he quickly solved difficult *Times* crosswords, along with the cultured mind, the historical interests, as Yates so eloquently outlined, all displayed a man, a mind, well versed beyond biometry.

This breadth is illustrated well in Fisher's address at the inaugural meeting of the British Region in London 1948—it is brilliant; see Fisher (1948). It is a wonderful description of the place of its title "Biometry" in the scientific world. It starts:

"The rise of biometry in this 20th century, like that of geometry in the 3rd century before Christ, seems to mark out one of the great ages or critical periods in the advance of the human understanding."

Fisher continues to trace... from the Greek geometers

"... Man learnt to reason deductively... giv(ing) rise to the subject known as *Logic*... the *second great stage of intellectual liberation*... has been reserved for *Biometry*..." (emphasis added)

This leap went not to astronomy or some other science but to our science, biometry! What a courageous assertion; yet Fisher's vision is broad and his historical sense very keen.

Fisher goes on to explain that in his opinion it was Francis Galton who was most responsible for preparing the groundwork, with his insistence that we "think constructively about variable phenomena." Fisher elaborates:

"(B)iometers... know well... that a great variety of definite statements could be made about every variable phenomena that had been studied. ... (W)ithout the modern concept of frequency distributions, and the habit of thinking coherently in terms of frequency distributions, thought comes to a full stop."

More elaboration follows before Fisher continues on the merits of biometry as a discipline:

"The primitive function of the biometric movement... is therefore to conserve by constant use, ... improve and refine, ... an understanding of variable phenomena..."

In a succinct *précis* of the role of the Society as a professional scientific organization, Fisher concludes

"(Our role) is to promote interchange of ideas, personal contacts, and mutual appreciation of our diverse problems and methods, that we have felt the need of a new scientific organization, in which our work may be viewed in a new perspective, not as something extraneous and eccentric, a funny sort of botany, for example, or of palaeontology, or of medicine, but as a tidal movement of our time, which has already begun to refresh and reinforce the means of research in all the biological sciences."

Fisher's tidal movement is still on the move; we owe much to him as a Society and as a scientist. This giant is much more than these, yet transcends both!

## 8. Conclusion

As a final observation, it is noted that the Archive folders reveal a who's-who of our early fathers. The writing though is that of a formal stilted language, for example, "I beg to

inform you. . .” However, a very notable exception exists—in the letters between Fisher and Bliss. These demonstrated a very clear and deep warmth and mutual regard that shone through. Further, Fisher always greeted Bliss with “My Dear Chester,” or “Dear Chester,” while Bliss always addressed Fisher as “Dear Professor Fisher.” This is quite remarkable as for each this formality or lack thereof was at variance with his own culture, such was the respect that embraced their relationship.

In conclusion, our first President Sir Ronald Fisher was a significant player in the formation of our Society. As a Father of Statistics, he made revolutionary and fundamental contributions to science, to statistics, to biometry, especially in the field of experimental design. It is therefore fitting that Fisher and the IBS are forever intertwined in the Society log of a Fisher  $3 \times 3$  Latin square design.

Finally, the Supplementary Materials contain insights from two letters written by two of Fisher’s colleagues, Alf Cornish and Henry Bennett on the occasion of his death in Adelaide Australia; see Web Appendices A–C in Supplementary Materials.

### 9. Supplementary Materials

The Supplementary Materials contain Figure 3 referenced in Section 2.3, Figure 4 referenced in Section 4, Figure 5 referenced in Section 2.2, and extracts from the Alf Cornish and Henry Bennett letters mentioned in Sections 6–8. These are available with this paper at the *Biometrics* website on the Wiley Online Library.

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