

THE MENDEL NEWSLETTER

Archival Resources for the History of Genetics & Allied Sciences

ISSUED BY THE LIBRARY OF THE AMERICAN PHILOSOPHICAL SOCIETY

New Series, No. 17

June 2009

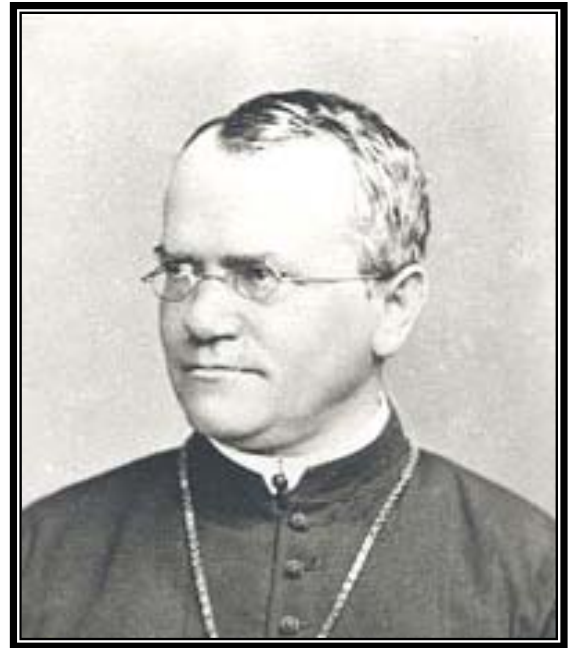
Welcome to the New, Digital *Mendel Newsletter*

THIS ISSUE of the *Mendel Newsletter* begins its new service exclusively in digital format. It brings this title in line with other publications of The American Philosophical Society, which are now distributed electronically. Further, it is one more contribution to a “green world,” sensitive to the demands of physical and economic resources.

Timely access to this periodical may now be had by our Society’s international membership and by researchers and students anywhere. The links included in each article are “live,” giving readers instant access to the cited resources. Such accessibility from any place in the world eminently continues the Society’s founding purpose, 266 years ago, of disseminating Useful Knowledge. The usefulness of this small, annual serial keeps pace with a changing world, bringing discoveries and new ideas to a more widely distributed, more intimately connected audience. And to our new readers, welcome.

In keeping with the digital medium, we introduce through these articles two important online resources: the Genetics and Medicine Historical Network, and a database that consolidates resources created by more than a hundred early researchers of post-re-discovery “mendelism.”

Also introduced here are overlooked and newly discovered paper records—original documents, the kind of traditional trove that continues to reveal (sometimes in surprising places) rich historical resources in genetics research. We have, of course, a long-standing appreciation for the inherent value of carefully secured and described primary-source collections, but to which we add the embrace of immediacy of inter-connection between researchers and collections through electronic media.



Gregor Mendel

IN THIS ISSUE

- | | |
|---|----|
| Preserving the History of Medical Genetics: The Genetics and Medicine Historical Network — <i>Peter S. Harper</i> | 3 |
| One Hundred and One Mendelians — <i>Michael Buttolph</i> | 10 |
| Gregor Mendel’s “Covington Connection” — <i>Tom Ward</i> | 11 |
| The Papers of William Bateson and Alan Geoffrey Cock at Queen’s University — <i>Donald R. Forsdyke</i> | 19 |
| Resident Research Fellowships in Genetics, History of Medicine and Related Disciplines | 22 |

The Mendel Newsletter

American Philosophical Society Library

105 South Fifth Street

Philadelphia PA 19106-3386

www.amphilsoc.org/library



Editor

Michael Dietrich
Department of Biological Sciences
215 Gilman Hall, HB 6044
Dartmouth College
Hanover NH 03755
Michael.Dietrich@dartmouth.edu

Managing Editor

Martin L. Levitt, *American Philosophical Society*
mlevitt@amphilsoc.org

Assistant Managing Editor

Earle E. Spamer, *American Philosophical Society*
espamer@amphilsoc.org

Editorial Board

Mark B. Adams, *University of Pennsylvania*
Garland E. Allen, *Washington University*
John Beatty, *University of Minnesota*
Frederick B. Churchill, *Indiana University*
Michael R. Dietrich, *Dartmouth College*
Bernardino Fantini, *Institut Louis Jantet d'Histoire de Medicine, Geneva*

Barbara Kimmelman, *Philadelphia University*
Martin L. Levitt, *American Philosophical Society*
Jane Maienschein, *Arizona State University*
Diane B. Paul, *University of Massachusetts, Boston*
Jan Sapp, *York University, Toronto*
Vassiliki Beatty Smocovitis, *University of Florida*

The Mendel Newsletter is issued annually by The American Philosophical Society Library, free of charge. It is available now only in electronic format. Readers may print their own copies. The current issue and many back issues may be downloaded from *The Mendel Newsletter* webpage at www.amphilsoc.org/library/mendel

To be placed on an email list for notification of the newsletter's availability, send your email address to mendel@amphilsoc.org Requests to be removed from the list may also be sent to this address.

Inquiries relating to article contributions to *The Mendel Newsletter* may be sent to the Editor.

This issue is regrettably delayed from 2008.

Preserving the History of Medical Genetics: The Genetics and Medicine Historical Network

Peter S. Harper

Research Professor in Human Genetics (Emeritus), Cardiff University

DURING the past half century genetics has become one of the central aspects of medicine. It has been responsible for the development of a new medical speciality – medical genetics – and increasingly also forms part of medical practice in general. During the same period the study of human genetics has given numerous insights into problems and mechanisms relevant to genetics as a whole, and to our understanding of biology generally. Indeed *Homo sapiens* can be considered as the most studied of all species, especially since the successful completion of the mapping and sequencing of the human genome.

Despite this, little attention has been given until recently to documenting and preserving the history of this pivotal field of medicine and science. Geneticists themselves have for the most part been too busy in advancing research, looking forward in time rather than back; historians have for the most part focussed on the earliest years of genetics, and on the problems of eugenics, leaving the post-world war 2 period—representing essentially the entire lifetime of modern human and medical genetics—as largely unexplored territory.

Fortunately, this unsatisfactory situation has begun to change during the past 5–10 years and a number of initiatives have been developed to redress it. This article outlines one such initiative, the *Genetics and Medicine Historical Network*, European based but international in scope, which is addressing some of the principal areas that need to be tackled if the history of human and medical genetics is to be satisfactorily preserved and documented.

Background to the Network

Around the beginning of the present century a number of workers in the field of medical genetics, including the author, became increasingly aware that the history of the field was being irretrievably lost; by the death of founding members, the destruction and dispersal of written records and books, and by the lack of interest

and active involvement both of historians and geneticists. These problems were discussed informally at the 2002 meeting of the European Society of Human Genetics in Strasbourg, and it was decided to form a network of those interested to make a start in redressing the situation.

The *Genetics and Medicine Historical Network* can be considered to have actually begun with the issue in January 2003 of its first newsletter to a mailing list of those known to be interested¹. The newsletter was from the outset simple in format and purely electronic (lack of funds and time precluded a printed circulation). This first newsletter stated the aims of the network as follows:

- Identification and preservation of key records. Many prominent workers are retiring and there is a danger of important material being lost.
- Interviews with key figures
- A web site documenting and linking available resources
- Stimulating detailed work in the field, whether by historians or by geneticists in their own area of work.

These aims have remained broadly unchanged over the past five years and have formed the main basis for the network's activities. The same newsletter also gave a broader list of 'possible areas for exploration', some, but not all of which have been developed further.

Possible areas for exploration:

- Identification of key figures in development of the field in specific countries
- Location of records of key workers; identification of those in danger of loss or destruction
- Existing collections of important original published or unpublished material
- Existing or proposed papers, books or other material on historical topics in different countries

- Historical images—portraits, buildings, other items
- Encouragement of academic History of Science/Medicine departments to undertake detailed studies in the field
- Professional Societies in Human and Medical Genetics in different countries; origins and archives
- Special contributions of particular countries
- Documentation of development of particular fields of Human and Medical Genetics
- Documentation of particularly important or controversial events or developments

The network has functioned since 2003 in part through its newsletters (12 in total to the present) and through its website (www.genmedhist.org). But it has also undertaken a series of specific activities, listed in Table 1. Here, I examine these in more detail and try to assess how far they have helped towards achieving

<p>Table 1 Principal Activities of the Genetics and Medicine Historical Network</p> <p>Specific Activities International workshops on Genetics, Medicine and History Human Genetics Historical Library Preservation of personal scientific records of key workers Recorded interviews with medical geneticists Dissemination through books, articles and presentations</p> <p>General Activities Newsletter Website (www.genmedhist.org)</p>
--

the primary goal of ensuring the preservation and documentation of the history of human and medical genetics.

International Workshops

These have been the most visible, and arguably the most effective of the Network’s activities, at least in terms of encouraging those interested and in forming links and collaborations between the two communities of geneticists and historians. So far they have been held as satellite meetings of the European Society of Human Genetics², and the first two were greatly helped by support from the Wellcome Trust. Reports from each of the workshops can be found on the *genmedhist.org* website.

The initial workshop, held in Birmingham UK in

May, 2003, was partly exploratory, in terms of development of the Network, but also marked by valuable contributions, principally with a Birmingham connection (eg: Maj Hulten, Birmingham, on the discovery of the correct human chromosome number; John Edwards on the early contributions of Birmingham to genetics and wider science).

The second workshop, in May 2005, was of particular significance in being held in Mendel’s Abbey of St Thomas, Brno, in the Czech Republic; the atmosphere provided by this venue, as well as the valuable presentations, provided a foundation for a true interchange of ideas between historians and geneticists, allowing both communities to recognise the value of each other’s skills and experiences, and emphasising the richness and variety of historical material provided by the field of human, and especially medical genetics.

The third workshop, organised by historian Toine Pieters (Amsterdam), in May 2008, in Barcelona, encouraged the involvement of social scientists, since it accompanied a joint congress of ESHG with the European Meeting on Psychosocial Aspects of Genetics (EMPAG). As with the Brno workshop, this allowed the experience of a different community to be shared, showing the importance of the social aspects of historical studies, while also illustrating the importance of analysing the historical dimension in social studies of genetics.

The next (4th) International Workshop on Genetics, Medicine and History will be held June 10–12, 2010 in Gothenburg, Sweden (see genmedhist.org website for details) and will have as its theme ‘The Early History of Human Molecular Genetics’.

The Human Genetics Historical Library

Although the importance of preserving records and book collections was recognised from the outset, the aim of achieving a specific physical collection of printed books relating to human and medical genetics does not feature in the initial aims or possibilities. During 2003, though, it became an urgent topic partly because of the imminent destruction or dispersal of several departmental collections, partly because a number of workers being interviewed (see below) expressed concern over the future of their personal

Table 2
The Human Genetics Historical Library—Summary

Definitive international collection of books on human and medical genetics

Archived and curated at Cardiff University Library Special Collections (SCOLAR)
(www.cardiff.ac.uk/insrv/libraries/scolar/index.html)

Collection based entirely on donations by individuals, departments and libraries

Detailed cataloguing of collection funded by Wellcome Trust

Complete inventory and full cataloguing details accessible on web
(<http://www.genmedhist.info/HumanHistLib/>)

To donate books see website or contact HarperPS@cardiff.ac.uk

Table 3
The Human Genetics Historical Library—Growth and Development

2003	Initial planning for Library
2004	Library initiated by first major donations
2005	Collection recognised as part of Cardiff University Special Collections
2007	Detailed cataloguing of collection begins
2008	Collection passes 2000 volumes (all donated)

libraries. Since no specific collection covering the field existed world-wide, it was decided to initiate one, which soon became an important element of the Cardiff University Special Collections.

Details of the Library's development, growth and functioning have been recorded elsewhere³ and are summarised in Tables 2 and 3. A combination of a series of major book donations, funding from the Wellcome Trust for detailed cataloguing, and the expertise in curation of Cardiff University Libraries staff, have enhanced its success. The Library now contains over 2000 volumes, many of them rare or difficult to access; with continued growth and since full details of the content, provenance and composition of the library can be accessed online (www.genmedhist.info/HumanHistLib/), the Human Genetic Historical Library should become a valuable international resource, through its overall data, as well as complementing other book collections on more basic genetics that already exist.

Recorded Interviews with Medical Geneticists

Oral History is one of the most urgent as well as important aspects of preserving the history of human

and medical genetics and, until recently, one of the most neglected. This is surprising when previous initiatives in basic genetics and molecular biology are considered, such as those undertaken by the Cold Spring Harbor Archive and Genetics Society of America. Fortunately programmes of interviews have now been established on both sides of the Atlantic, though not without difficulties in obtaining funding support.

The American *Oral History of Human Genetics* project (which may be accessed at www.socgen.ucla.edu/hgp/index.htm), initiated in 2001, has undertaken 35 interviews so far, almost all with Americans or Canadians, of which the transcripts of six are available on the web. The European programme, undertaken by the author, has completed 75 interviews, but lack of funding has thus far restricted the editing and dissemination of the transcripts. Excerpts from 10 of the recordings, all with workers involved in the initial development of human cytogenetics were placed on a CD accompanying the author's book, *First Years of Human Chromosomes*⁴, and are now also accessible on the [genmedhist.org](http://www.genmedhist.org) website. A

listing of those interviewed so far is given in Table 4 [following the text]; this is also on the website and it is intended that all transcripts will also be placed there once editing, detailed consent and other aspects have been completed.

Since no details of the series have so far been published, though several presentations have been given, the following brief and preliminary account may be of interest to readers. Possibly it might also lead to sources of funding, lack of which has considerably delayed the project.

The interviews began in December 2003, the first being with Professor Paul Polani, since deceased⁵. It was soon realised from the initial interviews that most of the workers involved had been responsible for the early discoveries in human cytogenetics, so an attempt was made to interview as many as possible of those still living who had contributed to this field, both in Europe and North America. This series of interviews, 18 in total, has proved to be a rich source of information about this important period of human genetics history, notably the years 1955–1960, and *First Years of Human Chromosomes* was essentially written around the framework provided by these

interviews.

An effort has been made to interview all the founders of medical genetics in Britain; it can be seen from Table 4 that 15 interviews currently fall into this category. A number of important non-medical UK workers in human genetics is also represented, but until now less systematically than those in medical genetics. Initially few workers in human molecular genetics were included, on account of their younger age range, but a systematic attempt is now being made to redress this.

Turning to continental Europe, interviewing has been to a considerable extent opportunistic, advantage being taken of invitations to lecture and of conferences in different countries. Until now 26 interviews of workers from continental Europe have been completed, compared with the overall total of 36 from the UK. No attempt has been made to duplicate the North American initiative and there has been close contact between the two; there is more than sufficient work to occupy the projects on each side of the Atlantic for a number of years to come.

A word of caution should be applied to my own interview series, which is that I am not a professional historian and have had limited training in oral history as such (though I have had 35 years of interviewing experience, amounting to some 15,000 hours in total, as part of a professional lifetime in genetic counselling!). Nevertheless I consider that the interviews do provide a valuable resource, particularly since six of those interviewed have subsequently died, and since no trained historian in Britain has so far shown interest in undertaking a comparable programme. Although, as indicated, it may be some time before the complete series of transcripts is fully available, enquiries from scholars are welcome in the meantime.

Personal Scientific Records

The United States is exceptionally fortunate in that the American Philosophical Society (APS) has assembled a unique collection of the scientific records of workers in classical genetics, largely stimulated by the efforts of geneticist Bentley Glass⁶. The Cold Spring Harbor Archive is another valuable repository for records in molecular biology, while numerous individual university archives also house well curated and well indexed record sets for specific workers affiliated to their institution.

By comparison, European initiatives are meagre

and fragmented; in the UK at least no systematic effort has been made over the past half century to preserve the records of even some of the most important workers in human genetics, though fortunately there are some major collections covering such early geneticists as William Bateson (John Innes Archive), Karl Pearson and Lionel Penrose (University College London) and Cyril Darlington (John Innes Archive). It is noteworthy that critical scientific biographies in the field of genetics have been undertaken almost exclusively by American workers and published mainly by American University presses, but are still lacking for key British workers such as JBS Haldane and, most notably, Penrose, even though Penrose's papers are fully archived at University College, London.

For the more recent workers in human and medical genetics, beginning their careers in the years immediately after World War 2, we are at a particularly critical time; a considerable proportion of the founders are still living, but a systematic effort, comparable to that of Bentley Glass in the 1960s, is needed if important record sets are not to be lost. Until very recently there was no sign of this happening either in America or Europe, but fortunately, if belatedly, the situation is beginning to change.

In Britain two factors are helping to ensure the preservation of personal scientific record sets in human genetics. First, support from Wellcome Trust to the author, and his archivist colleague, Peter Keelan, is in part for the proactive identification of important records of workers in the field. Even more importantly, the National Cataloguing Unit for the Archives of Contemporary Scientists (NCUACS)⁷ has become involved in this initiative, resulting in detailed professional cataloguing, with several important sets of personal scientific records now fully catalogued (James Renwick, CAB Smith, Malcolm Ferguson-Smith). It is hoped that such cataloguing will be progressively extended to other record sets that have been identified, and that this proactive approach will avoid the loss of important material after a worker's death.

In America, APS is once again beginning to focus on genetics and has attracted a few sets of records from important human and medical geneticists, notably those of Arno Motulsky, Seattle. A more extensive and proactive programme is required though. The records of Victor McKusick are, fortunately, fully preserved at Johns Hopkins University. For Canada, though, colleagues tell me that there is no systematic

plan for the preservation of records in the field, something especially unfortunate given the important role of Canadian workers in the early development of medical genetics⁸.

Until recently, most personal archives consisted of written material, but this has now been replaced to a large extent, especially for correspondence, by electronic records. This provides a major challenge to all concerned for the preservation of scientific history. On the one hand it is vulnerable to both deliberate deletion and 'tidying up' as well as to accidental loss; on the other hand the ease of email correspondence across the world has probably stimulated the writing of more direct letters between workers themselves than at any time since the Victorian era, and letter writing is once again a central activity for most scientific workers.

Two other forms of written records form important but so far largely neglected sources that need special attention if they are to be preserved. The first is the detailed documentation of major research projects, particularly the background material and correspondence which can give more insight into the progress and difficulties of the work than do official reports to grant bodies or peer reviewed publications. The studies of Susan Lindee based on records on genetic disorders of the Amish by Victor McKusick illustrate the value of such source material⁹.

Of equal value are the records of professional societies and interest groups in human and medical genetics, especially when these are still at an informal or early stage. In Britain, most of the early correspondence and meetings around the time of formation of the *Clinical Genetics Society* in 1970 is now preserved, while a good example of the scientific importance of early groupings can be seen in such informal publications as CVS (Chorionic Villus Sampling) Newsletter, edited by Laird Jackson of Philadelphia in the early years of chorionic villus sampling in early prenatal diagnosis.

Conclusion

The work I have outlined here, focused principally on human and medical genetics in Britain, has illustrated

what needs to be done world-wide and, to a very limited extent, what can be done even without extensive funding or institutional support. This is, however, only a fraction of what needs to be done, if adequate material, written and oral, is to be available for future detailed historical studies in the field.

This work on the primary material needs to be initiated primarily by those working in genetics and interested in its history, working wherever possible in cooperation with archivists and historians. Numerous such people exist, and the Genetics and Medicine Historical Network has helped to encourage and link them. However few have much time for this work, so that historical studies remain mostly a 'spare time' interest, while almost none have access to significant funds, or to undergraduate or graduate students who might be interested in pursuing specific projects related to the material. The role of the Network in forming links with archivists and interested historians has thus been particularly significant. Hopefully, general accounts of the history of human and medical genetics for a wider readership, now beginning to be written, will also encourage the involvement of a greater number of people.¹⁰

Still, though, the number of historians and philosophers of science who have an awareness of, let alone a major interest in modern human and medical genetics remains regrettably small, though it is increasing. There is perhaps no other area of science and medicine where the impact on both health and on social issues has been so rapidly developing and so profound, and historians will find a rich seam of data available for critical and detailed analysis – provided that it is not irretrievably lost in the meantime.

Acknowledgements

I thank the many people who have contributed in different ways to the development of the Genetics and Medicine Historical Network, particularly Joanne Richards as coordinator, Peter Keelan, head of Special Collections at Cardiff University and Tim Powell at NCUACS, Bath University.

The work has been supported by grants 076914 and 078709 from the Wellcome Trust.

Table 4
Recorded Interviews with Workers in Human and Medical Genetics

NAME	COUNTRY	FIELD OF WORK
Baraitser, Michael	UK	Clinical neurogenetics
Bates, Gill	UK	Human molecular genetics
Berg, Kare	Norway	Medical genetics
Bochkov, Nikolai	Russia	
Bodmer, Walter	UK	Human population genetics
Boué, André and Joelle	France	Prenatal diagnosis
Berry, Caroline	UK	Clinical genetics
Berry, Sam	UK	Population genetics
Berger, Roland	France	Human cytogenetics
Bobrow, Martin	UK	Medical genetics
Brogge, Anton & CB Van de Hagen	Norway	Human cytogenetics
Burns, Joan	USA	Genetic Counselling
Conneally, Michael	USA	Human genetics
Crow, James	USA	Population genetics
Dausset, Jean	France	Immunogenetics
Delhanty, Joy	UK	Human cytogenetics
Donnai, Dian	UK	Clinical genetics
Edwards, Anthony	UK	Mathematical genetics
Edwards, John	UK	Medical genetics
Emery, Alan	UK	Clinical genetics
Evans, H John	UK	Human cytogenetics
Evans, Edward	UK	Human cytogenetics
Feingold, Josué	France	Mathematical genetics
Ferguson-Smith, Malcolm	UK	Human cytogenetics
Fraccaro, Marco	Italy	Human cytogenetics
Fraser, George	UK	Medical genetics
Frézal, Jean	France	Clinical genetics
Fryns, Jean-Pierre	Belgium	Clinical genetics
Gilkenkrantz, Simone	France	Human cytogenetics
Ginter, Yevgeny	Russia	Medical genetics
Hamerton, John	UK/Canada	Human cytogenetics
Harnden, David	UK	Human cytogenetics
Harper, Peter	UK	Clinical genetics
Harris, Henry	UK	Cancer genetics
Harris, Rodney	UK	Clinical genetics
Hastie, Nick	UK	Human molecular genetics
Hulten, Maj	UK/Sweden	Human cytogenetics
Jacobs, Pat	UK/USA	Human cytogenetics
Jenkins, Trefor	South Africa	Medical genetics
Laurence, K Michael	UK	Medical genetics
Laxova, Renata	Czechoslovakia/USA	Clinical genetics
Laziuk, G	Byelorussia	Paediatric pathology
Lee, Muriel	UK	Human cytogenetics
Lindsten, Jan	Sweden	Medical genetics
Lyon, Mary	UK	Radiation genetics
Mandel, Jean Louis	France	Human molecular genetics
Maroteaux, Pierre	France	Clinical genetics
Medvedev, Zhores	UK/Russia	Radiation genetics
Mittwoch, Ursula	UK	Human genetics
Moore, Keith & Bertram, Ewart	Canada	Human genetics

Mohr, Jan	Norway/Denmark	Human genetics
Morton, Newton	USA/UK	Mathematical genetics
Nevin, Norman	UK	Clinical genetics
Pembrey, Marcus	UK	Clinical genetics
Polani, Paul	UK	Medical genetics
Read, Andrew	UK	Human molecular genetics
Réthoré, Marile-Odile	France	Human cytogenetics
Roberts, Derek	UK	Human population genetics
Searle, Tony	UK	Radiation genetics
Scriver, Charles	Canada	Human biochemical genetics
Sutherland, Grant	Australia	Human cytogenetics
Tobin, Allan	USA	Huntington's disease
Turleau, Catherine	France	Human cytogenetics
Van Den Bergh, Herman	Belgium	Medical genetics
Vogel, Friedrich	Germany	Medical genetics
Warburg, Mette	Denmark	Ophthalmological genetics
Williamson, Bob	UK/Australia	Human molecular genetics
Weatherall, David	UK	Haemoglobin genetics
Zech, Lore	Sweden	Human cytogenetics

Notes

1. Anyone interested in being placed on the mailing list for the Newsletter of the Genetics and Medicine Historical Network may contact the author (HarperPS@cardiff.ac.uk). The complete series of newsletters can be accessed via the Network website (www.genmedhist.org).
2. Further details on European Society of Human Genetics can be found at www.eshg.org.
3. Harper PS, Keelan P, Pierce K (2009) The Human Genetics Historical Library: An International Resource for Geneticists and Historians. Submitted to *Human Genetics*.
4. Harper PS (2006) First Years of Human Chromosomes. The Beginnings of Human Cytogenetics. Oxford, Scion Press.
5. Paul Polani (1914–2006) worked principally at Guy's Hospital, London, where he was responsible for major discoveries relating to the chromosomal basis of sex chromosome disorders, and for the founding of one of the first comprehensive medical genetics institutes.
6. The APS website (www.ampilsoc.org) records the important role of Bentley Glass, who over a prolonged period encouraged his colleagues to bequeath or donate their records to the APS.
7. Details of these and other activities can be found on the unit's website (www.bath.ac.uk/ncuacs).
8. See the book *Medical Genetics in Canada: Evolution of a Hybrid Discipline*, ed Soltan HC, University of Western Ontario, 1992.
9. See Lindee S (2005) *Moments of Truth in Genetic Medicine*, Baltimore. The Johns Hopkins University Press.
10. The author's book, *A Short History of Medical Genetics*, Harper PS (2008), New York, Oxford University Press, provides a recent example (www.oup.com).

One Hundred and One Mendelians

Michael Buttolph

Imperial College, London, U.K.

m.buttolph@ucl.ac.uk

DESCRPTIONS of the early history of Mendelism have focussed upon Mendel's researches published in 1866; their neglect until the end of the century; the "rediscovery" in 1900; and the subsequent dispute between the early mendelians and the "biometric" school of Karl Pearson and Raphael Weldon (roughly 1902 to 1912).

I have recently completed a detailed study of the establishment and growth of "mendelism" after the re-discovery. The objective was to show how the subject would have appeared to a well-informed biologist, abreast of recent developments, at the end of its first decade. The study is based upon publications of the time, each of which presents a body of data from which the author is able to demonstrate Mendelian heredity. These publications thus reflect two processes in the development of the new science—the induction of new recruits, and the augmentation of the supporting factual evidence. The 101 authors of these papers I regard as the first "mendelians".

The database is now published on the internet, by courtesy of Joe Cain (who supervised this work in the course my studies for the degree of MSc at University College London). It is accompanied by necessary details of how it was constructed, and some supporting commentary. A picture emerges of a vigorous, well-supported new science, a complex network of theory and experiment to which mendelism had brought clarity and coherence. In particular, the study contextualises the "biometrician-Mendelian" dispute as one of many strands in the aggregate fabric of the biology of the time.

The database includes scientists, agriculturalists and medical practitioners from a dozen different countries who reported Mendelian inheritance of a wide range of characters in plants and animals (including humans). It reflects the gradual establishment of Mendelism as an idea, the aspirations of the mendelians to a more scientific kind of biology, and the promise of practical applications of the new knowledge. Whereas the failure of his contemporaries to appreciate Mendel has been seen as evidence that his work was "premature", this study suggests that the re-discovery in 1900 was a case of "post-maturity". Some interesting facts emerge: for example, there are seven French mendelians, which is rather more than might have been expected when it has been generally felt that mendelian genetics was not well received in that country.

The database is intended to be a complete listing of all qualifying publications in the decade 1902 to 1911 (there was no qualifying publication in the year 1901). I believe that it captures the great majority of qualifying publications, so that it can be used for practical purposes. However, I have no doubt that there are omissions, and that the database can be improved and rendered more useful for us all if other workers offer corrections (but I would appeal to erstwhile contributors to consider the detail of the criteria for admission to the database).

This material is available online at www.londoncentre-hstm.ac.uk/thesis

Gregor Mendel's "Covington Connection"

Tom Ward

Diocesan Archivist, Covington, Kentucky

EVERYONE who ever had high school biology knows the name of Gregor Mendel (1822–1884), the famous monk geneticist whose nineteenth century experiments with the hybridization of peas in his Austrian monastery garden revolutionized our understanding of heredity. Although his groundbreaking work was virtually ignored during his lifetime, his achievements were finally recognized in the early twentieth century.

So what could the "Father of Genetics" possibly have to do with the Diocese of Covington? An obscure box of files in the diocesan Archives holds the answer to the disappearance of some long-sought documents concerning Mendel's life. The secret journey of these documents from Europe to Kentucky is an intriguing tale of a scholarly bishop, an anxious abbot and marauding Nazis on the eve of World War II.

The above mentioned prelate was Covington's own Francis W. Howard. Even before becoming a bishop, Father Howard of the Diocese of Columbus had exhibited an abiding interest in Mendel's work, with a special focus on how his principles affected Charles Darwin's theory of evolution and its basis in the Darwinian idea of "natural selection," often popularly described as the "survival of the fittest." Father Howard was a very scholarly man and had done much research on Mendel and natural selection since the beginning of the century. At first he thought that Mendel's principles debunked evolution and natural selection. It seems that over time, however, he accepted evolutionary change, although drawing from Mendel certain crucial refinements to Darwin's natural selection. To his credit, he contacted scientists and professors in order to ascertain the current state of thought regarding natural selection before drawing his own conclusions.

Francis Howard became the fifth Bishop of Covington in 1923. The "Roaring Twenties" were a decade of prosperity and prohibition, flappers and gangsters, speakeasies and jazz, but also a time of

clashes between science and humanism on the one hand, and religion—in particular, Fundamentalism—on the other. The most famous incident was the 1925 Scopes "Monkey Trial" in Dayton, Tennessee, in which teacher John Scopes was convicted for teaching Darwin's theory of evolution in violation of state law. To many believers, the Darwinian theory of evolution seemed to contradict not only the literalistic interpretation of the account of creation in the Book of Genesis, but also the very idea of God as creator of all that exists. Many Catholic theologians did not think that evolution undermined Christian belief, but others questioned its scientific validity.

In the 1920s, Bishop Howard's focus on evolution seems to have been to try to understand the underlying principle by which it operated to bring about changes in a species, without denying God's creative activity in the process. This required a comprehensive knowledge of heredity, of how genetic variations in parents are passed on to their offspring to create generational differences—hence, his desire to learn all he could about Mendel and genetics, which he thought would offer a fuller understanding of the mechanism behind evolution than natural selection alone did. (It has been remarked in regard to evolution that "Darwin explained what happens. Mendel explained how it happens"). He also hoped to open a scientific institute to teach and study genetics along with Scholastic philosophy.

Another controversial theory during this period was the pseudo-science of "Eugenics." Proponents of this specious theory presented data with a veneer of scientific credibility that allegedly proved that "feeble-minded" or criminal individuals passed their defective genes on to their offspring, leading many Eugenicists to call for the sterilization of "inferior" persons. Eugenics was sometimes more broadly applied to show that not only individuals, but also some non-white races were genetically inferior; thus, some Eugenicists warned against any interbreeding between

the races that would dilute the purity of the “superior” race. Such ideas provided a distorted rationale for Hitler’s “final solution,” his attempt to exterminate the Jews of Europe—the horrific example of the Nazis’ murderous excesses in the Holocaust led most people to abandon Eugenics in the aftermath of World War II. Even before the war, opponents of Eugenics, including the National Catholic Welfare Conference (and presumably Bishop Howard), thought that Mendel’s principles had the potential to refute this misapplication of genetics.

The bishop also hoped to answer anti-religious skeptics who accused the Catholic Church of “obscurantism” regarding scientific matters. He wanted to show that there was no inherent incompatibility between science and religious belief, with Mendel as a prominent example of a devout Catholic who had advanced the frontiers of scientific knowledge. In order to pursue this goal, he believed it would be necessary to access Mendel’s papers—documents proving Mendel’s religiosity were important to the bishop because some secular critics had questioned the depth of Mendel’s Catholic convictions. (Mendel was eventually made abbot of his monastery, a fact that in itself shows that his contemporaries recognized his spiritual side).

The Diocese of Covington had its own priest scientist. Father Edward Rohrer was pastor of St. Rose of Lima Parish in Mayslick and a botanist who wrote a primer on the principles of botany for the Latin School. Father Rohrer shared the bishop’s admiration of Mendel. (Bishop Howard was president of the Mendel Society and Father Rohrer was its secretary). It was he who in 1928 first had the honor of visiting Mendel’s Abbey of St. Thomas in Brno, Czechoslovakia (in what is now the Czech Republic) at the request of Bishop Howard.

The bishop sent his priest off with a letter of introduction to the Abbot of St. Thomas. This letter sheds light on his motive for taking this unusual step. “So much harm” the bishop wrote “is done in our country by the false theories of evolution, and so much has been done to obscure the fame of Mendel and to place him and the Church in a false light before the American people...” The phrase “false theories of evolution” would seem—in light of the bishop’s opinions expressed elsewhere—to mean not that evolution itself was a false theory, but rather to refer to misapplications of evolution, presumably Eugenics being one of them. The mutual acceptance of evolution by the two men is clear in a letter Father Rohrer sent to

the bishop before sailing for Europe. In it, he revealed his hopes for studying Mendel: “Perhaps the laws of Mendel may tell us how evolution operates...how differences arise among organisms...and by what means they are passed from one generation to another until they become part and parcel of the inheritance, thereby establishing a new species.”

By the time Father Rohrer departed for Brno, Bishop Howard seems to have accepted evolution in principle, while questioning the randomness in Darwin’s theory of natural selection as an explanation for its process; to him, Mendel’s work would explain the principles of variation within species in such a way that developments would follow from their God-given essence (what he referred to as the “metaphysical question”), rather than result from “blind chance” as in natural selection, thereby giving a theistic basis for evolution that would still be in accord with scientific evidence.

During Father Rohrer’s visit, he studied many documents concerning Mendel and his life in the Abbey of St. Thomas, and even talked to some older monks who had actually known the eminent abbot. But the establishment of the “paper trail” that became the “Covington Connection” would have to wait for the next decade and another priest to visit Brno at the instigation of the same bishop.



BISHOP HOWARD’S tenure in the Diocese of Covington continued into the 1930s, as America struggled through the Great Depression and warily witnessed the Fascist aggression of Germany, Italy and Japan. The most ominous development during this tumultuous decade occurred in 1933 with Adolph Hitler’s rise to power in Germany. Nazism, with its pernicious racial doctrines, alarmed Bishop Howard—it provided a new impetus to his study of Mendel and made his quest to find answers more urgent.

A fortuitous opportunity to renew the study of Mendel in Brno presented itself in 1933. Father Libert de Waegaere resigned as pastor of St. Paul Parish in Lexington in November for medical reasons and desired to return to his native Belgium for a period of recuperation. Bishop Howard granted him an extended leave of absence and later decided that this cleric’s residence in Europe would give him a chance to visit Brno. Father de Waegaere spoke French fluently and would use his hometown, Alost, as his base. Accompanied by a German-speaking professor, A. Dumon, from the University of Louvain, he visited the monastery in 1935 and 1938 to collect more data. It

was during these visits that the “Covington Connection” was established.

That the Nazis were on Bishop Howard’s mind is evident from a letter he mailed in April 1935 to Father de Waegenare after he had arrived in Alost. The bishop explained that he would obtain a stipend for Father de Waegenare so that he could “continue the study of Mendel and the problem of race that has become so prominent in Germany and will soon come into public attention in our own country...” While in Europe, Father de Waegenare collected for the bishop articles on what the two men referred to as the “race problem” or the “race question.” The priest located articles disputing Fascist racial theories, some of which he thought could be used in the *Messenger* as part of Bishop Howard’s Mendelian project.

Bishop Howard’s main interest, however, was to obtain data for an authoritative biography of Mendel in English, something lacking at the time. He also hoped to counteract the influence of an earlier work in German that allegedly disparaged Mendel’s motives for entering the monastery; according to Father de Waegenare, this author, Doctor Hugo Iltis, claimed that Mendel “only became a monk to have an easy life, free from cares and worry.” This motivated the bishop to emphasize Mendel’s devotion to the religious life. While in Czechoslovakia, Father de Waegenare also interviewed people, like Abbot Barina of St. Thomas and one of Mendel’s nephews, who had personally known Mendel and could testify to his strong faith.

During his efforts to find relevant documentation, Father de Waegenare had the enthusiastic assistance of the procurator of the Augustinian Abbey of St. Thomas, Father Anselm Matousek, who had been collecting material on Mendel in the abbey’s archives for twenty years. Although the abbey had destroyed Mendel’s scientific research after his death, Father Matousek had assembled a plethora of documentation on the abbot’s life. Father Matousek was pleased to hear of Bishop Howard’s interest in Mendel—he, too, wanted to dispel the notions of Mendel’s “mercenary purposes” for being in the monastery, though he was doubtful that Father de Waegenare would find anything in the copies he was providing that would assist Bishop Howard in his criticism of Darwinian evolution. Even before he actually met the priest from Covington, the procurator of St. Thomas sent to Father de Waegenare in Alost numerous documents in German. According to Father de Waegenare’s 1934 letters to Bishop Howard, most of the original documents concerning Mendel had been given to

Doctor Oswald Richter, a German biographer of the eminent abbot. Upon completion of Richter’s book, the documents were to go to a New York Augustinian, Father Gelasius Kraus.

The initial plan was to have Father de Waegenare collect and send whatever Mendel documents he could acquire to Covington where Bishop Howard had recruited two German-speaking priests (one seems to have been Father John Kroger, with whom Bishop Howard and Father de Waegenare often consulted) to translate them into English and write the biography. For some reason, these two priests were unable to follow through with this commitment. So Bishop Howard devised an alternate strategy—he asked his priest in Alost to write the biography himself. In order to do this, Father de Waegenare asked to have most of the copies he had already mailed to Covington returned to him as sources for the biography. He secured the services of a Professor R. de Maeght to translate the German documents into French for him. He then translated the French into English before mailing the papers and his own writings to Covington. Father de Waegenare returned all the Mendel materials to Covington when he was finished with them.

This roundabout method of acquiring sources did not seem to have greatly hindered Father de Waegenare. The result of his efforts was a biography of Mendel that appeared in serial form in the *Messenger*. The lengthy series ran in 31 installments from March 1938 through November 1941. (The *Messenger* was issued only monthly during most of that time). This biography was a unique publication of the diocesan newspaper and perhaps the first biography of Mendel in English. Back in Covington, Father Paul Ryan (who wrote the history of the diocese published in 1954) contributed to this series at the bishop’s request. He used the Mendel materials and articles written and mailed by Father de Waegenare in order to complete the final work. Although authorship was never attributed to anyone in the *Messenger*, it seems that both men should be considered coauthors of the work.

When Father de Waegenare made his final visit to St. Thomas during April and May of 1938, events in Europe were moving inexorably toward another world war. In September, England and France surrendered the Sudetenland of western Czechoslovakia to Hitler at the futile Munich Conference, hoping that this had bought them “peace in our time.” But the Nazi leader reneged on this agreement and seized the rest of the

country in early 1939. It was fortunate that Father de Waegenare had finished collecting his data when he did—it would have been extremely difficult and dangerous to have made another trip to Brno after 1938 because it had become part of Germany.

Father de Waegenare remained in Belgium even after the war had begun. England and France declared war on Germany following the Nazi's invasion of Poland on September 1, 1939. The Belgian people then lived in fear that German armies would soon sweep through their country to attack France as they had done in 1914 at the beginning of the First World War—which, in fact, the Nazis did. The Belgian-born priest noted in his letters the frenetic preparations being made for war in his homeland as the relatively small Belgian Army mobilized to meet the expected onslaught. But by that time, he had done most of the work he could have done in Europe and had sent many documents to Covington. The biography of Mendel was virtually completed, although he sent minor revisions to Father Ryan to be incorporated into the *Messenger* series.

As Belgium prepared for war, Father de Waegenare became concerned about his own safety and hoped to return to the United States while it was still possible. Bishop Howard, solicitous for the welfare of his clergyman, gave him permission to leave Europe whenever he thought it necessary. Yet as late as January 1940, the bishop still requested that Father de Waegenare “kindly continue to gather, if possible, material relating to Mendel, the Mendelian laws, and the problem of race.” In the end, he was unable to depart from Belgium before it was overrun by the Nazi blitzkrieg in the spring of 1940. From that point on, Father de Waegenare lived under Nazi occupation until the Allies liberated Belgium in late 1944. After Germany declared war on the United States following Pearl Harbor, he was unable even to communicate with his bishop and diocese. By the time he was able to resume correspondence, a new Bishop of Covington, William T. Mulloy, had succeeded Bishop Howard, who had died on January 18, 1944—it seems that Father de Waegenare was unaware of his death until nearly a year later. Father de Waegenare died in Alost in 1952.

It is not clear exactly what Bishop Howard intended the final end for the Mendel collection to be. But since he had only a few more years to live after the collection was completed, others would have to make the crucial decisions about what was to be done with the important documents now in Covington.

+

BISHOP HOWARD had high expectations for the Mendel papers that were mailed from St. Thomas Abbey in Brno, Czechoslovakia. He lived to see part of his dream for the Mendel collection fulfilled with the publication of the English biography series that Fathers de Waegenare and Ryan wrote for the *Messenger*. He had other plans for the papers that were not realized before his death in 1944. Yet the Mendel collection would be put to further use in the post-war 1940s to fulfill his overall goal.

After Father Libert de Waegenare had finished using the Mendel papers in Belgium for writing his part of the biography, he returned them all to Covington. Once he had them back, Bishop Howard at some point entrusted the papers to the care of Sister M. Julitta Bomkamp, SND. Sister Julitta had earned a Ph.D. in Biochemistry in 1942 and taught at Villa Madonna College in Covington (the predecessor of Thomas More College) from 1941 to 1961. In accordance with the bishop's wishes, she made the papers available to three promising science students who would write on three themes on which the bishop wanted to base a book he hoped to have published by the diocese. (No such book was ever published). The students chosen to do the research and writing were Laryl Lee Lahrman to write a life of Mendel, Fred Humphreys (later a Thomas More faculty member) to write on Mendel and evolution, and Dorothy Fitch to write on Mendel and eugenics. Their work, however, did not actually commence until after Bishop Howard had died. When the students completed their work in 1949, the bishop was no longer on the scene to select the depository for the Mendel collection, and the final disposition of the papers he so avidly sought became something of a mystery—solving it would engage the attention of one of the three students for several decades.

Laryl Lee Lahrman, parishioner of St. Therese Parish in Southgate and Notre Dame Academy graduate, was a Biology major at Villa Madonna College. She wrote her paper on Mendel's life in 1949 using as her primary sources English and German documents from the collection Sister Julitta had. Gus Lahrman (no relation) translated the German ones for her. After she completed her thesis in 1949, Laryl Lee attained a B.S. at Villa Madonna. Her studies at the college helped her launch a career as an educator, biochemist and consumer representative for the Food and Drug Administration. She married Alfred Delker in 1952 and they moved to New Jersey in 1958. As

early as the 1970s, she began seeking the whereabouts of the Mendel papers she had used as a college student. Over the course of many years, Mrs. Delker made enquiries of diocesan personnel and contacted other academic institutions that might have had an interest in obtaining the papers, but found no one who knew what had become of them.

It seemed to her that the most logical location for the diocese to store the records would be in the archives housed in the chancery next to the Cathedral. Sister Mary Philip Trauth, SND, was the diocese's first archivist as well as being a professor of History at Thomas More College. Since 1977 she had done an admirable job of organizing and maintaining the archives in the less than optimal conditions of the chancery basement. When Laryl Lee asked her to check the archives for a box containing the papers she had used, the diocesan offices were in the process of preparing to move from the chancery to the old St. Pius X Seminary building—renamed the Catholic Center—in Erlanger. But Sister Mary Philip was unable to locate the box (which might not even have been in the archives at that time) during the 1988 move. She did, however, find Laryl Lee's original 1949 thesis on Mendel at Thomas More and returned it to her.

Laryl Lee continued her search. She contacted the Augustinian-sponsored Villanova University in Philadelphia, whose administration had no information on these papers of its famous confrere from Brno, and the University of Illinois at Urbana-Champaign, which had some other Mendel documents retrieved from St. Thomas, but no knowledge of the particular papers she was seeking. She also communicated with the Abbey of St. Thomas itself and the Mendel Museum there to see if by some forgotten decision the diocese had returned the papers to them. But the curator of the museum did not have them and hoped to learn where this missing Mendel legacy might be.

After the collapse of the Communist regime in Czechoslovakia in the early 1990s, the new Czech Government displayed more of an interest in highlighting the career of one of its famous sons. (Technically, Mendel's nationality during his life was Austrian). In 2002, the Abbey of St. Thomas opened the Mendel Center, and the Government of the Czech Republic officially recognized the Mendel Museum as a Czech charity. The "Brno Mendel Initiative" was established to have the Abbey of St. Thomas accepted as an important historic site and place of scientific education. The museum created an exhibit on Mendel

and his work, "Gregor Mendel, the Genius of Genetics," and in 2006, a traveling exhibit, "Gregor Mendel, Planting the Seeds of Genetics," began an American tour at the Field Museum in Chicago.

Learning of the upcoming Mendel exhibit, Laryl Lee renewed her efforts in the twenty-first century to solve the nearly fifty-five year old mystery. In 2003, she made a trip to Covington from her home in Moorestown, New Jersey. She made an appointment to meet with me, the diocesan archivist since 2000, to initiate a new search for the missing box of Mendel papers. I knew nothing about it, but checked the archives' inventory and looked around for the box with no success. With dwindling hopes, she left a copy of her 1949 thesis for the archives in case the box might yet be found.

+

AFTER LEAVING her 1949 Mendel thesis at the diocesan archives in 2003, Laryl Lee Delker probably never expected to hear from me again. But on November 20, 2006, I surprised her with a most welcome phone call. About two weeks earlier, simply by chance, I had come across a box—not numbered as part of the archives' regular inventory scheme—in an obscure part of the archives' lower vault. The box had an archival label on it that listed its contents as "Materials on Mendel collected by Bp. Howard, Fr. Rohrer, Fr. De Waegenare" and its provenance as being from "Vault, 1140 Madison Avenue." (This was the address of the old chancery in Covington.) Recalling my visit with Laryl Lee a few years earlier, I took the box upstairs and eagerly flipped through the contents. One folder contained papers that seemed to be primary documents in German with accompanying English translations concerning Mendel's early life: his baptismal and vaccination certificates, high school records and a letter of recommendation to the monastery. I opened Laryl Lee's thesis and found that these documents were listed in her footnotes as sources. I knew then that I had stumbled upon at least part of the missing Mendel collection. The box also contained a 1913 edition of *Versuche uber Pflanzen-Hybriden*, Mendel's 1866 report on his hybridization findings, plus numerous secondary sources from the first few decades of the twentieth century: newspaper and journal articles on Mendel, Darwin, evolution and eugenics, as well as many notes and reflections in Bishop Howard's own barely legible handwriting.

When I found this box in the archives, I did not know the wide scope of the original contents of the Mendel collection and so did not realize that many of

the papers sent to Covington in the 1930s were not in it. But the box contained a 1979 article from *Folia Mendeliana* that provided a crucial clue as to the possible location of some of the rest of the missing material. (Interestingly, the fact that the box contained an item from this later date shows that at least one person had known its location and opened it since 1949). In this article, Doctor Edward O. Dodson, an educator and prolific author on biology and evolution, reported that Sister Julitta had provided him with a collection of Mendel papers during his tenure at the University of Notre Dame in South Bend, Indiana. (Sister Julitta attended Notre Dame during a summer session in 1951). Using this Mendel collection, Dodson wrote an article entitled “Mendel and the Rediscovery of His Work” for the October 1955 edition of the *Scientific Monthly*. In 1957, he went on to teach at the University of Ottawa, Ontario, and took the Mendel collection to his new office in Canada. This was something previously unknown to Laryl Lee.

After being informed of this, Laryl Lee began doing some research of her own using a tool that had been unavailable to the earlier Mendel scholars—the Internet. By searching the Internet, she learned that Edward Dodson had died in 2002. But she also found the address of one of his sons, Peter, a professor of Anatomy and of Paleontology at the University of Pennsylvania. The younger Doctor Dodson knew nothing of his father’s story about receiving the Mendel papers, but he responded to Mrs. Delker’s email query. On his next visit to his parents’ home in Ottawa, he searched for and located a box containing more Mendel documents in German and English. Peter Dodson sent copies of his father’s inventory of the 88 items in the box to Laryl Lee and me. Laryl Lee made comparisons and we were delighted to find that there were 75 matches with her thesis sources and that many documents were numbered following the same numerical system she had recorded in her footnotes; this indicated to us that much of what she had used in 1949 was in this box.

+

IN NOVEMBER 2007, the saga of the elusive Mendel collection was brought to a happy conclusion. The papers that crossed the Atlantic three times, traveled from Covington to South Bend to Ottawa to Philadelphia, at last returned to Covington after an absence of more than 50 years.

On Saturday October 27, 2007, Laryl Lee Delker called from New Jersey to tell me that Peter Dodson was flying to Northern Kentucky the following week

and was bringing his father’s portion of the Mendel collection with him. Doctor Dodson, a practicing Catholic, had a speaking engagement at the Cincinnati Museum Center on a topic that would have pleased Bishop Howard—the compatibility of Christian faith and science. He wanted to present the Mendel collection to Thomas More College on his way from the Cincinnati–Northern Kentucky International Airport. By doing this, he was graciously following the suggestion that Laryl Lee, Thomas More President Sister Margaret Stallmeyer, CDP, and I made to him after we confirmed that he possessed the papers.

On Thursday morning, November 1, Peter Dodson and his host, Glenn Storrs from with the Cincinnati Natural History Museum, met with Laryl Lee Delker, Sister Margaret and other TMC officials—Library Director Jim McKellogg, Vice President for Academic Affairs Bradley Bielski and Director of Communications Kelly Marsh—and me at the College. After a cordial greeting, we went to the library’s Thomas More Room to unpack the documents Peter brought. Among the many folders are some marked “Primary Sources,” which contain copies of the nineteenth century German documents with their accompanying English translations—it seems that the typed German documents are copies made by Father Matousek’s secretary and that the handwritten English documents are the translations made by Father de Waegenaere. There is also correspondence that sheds more light on the many twists and turns of the Mendel collection’s convoluted journey to its final destination at the college.

The Mendel Collection is now being processed so that it will eventually be accessible by researchers in the TMC Library and online. It was certainly a fortuitous string of events that at last brought this special collection back to the Diocese of Covington where Bishop Howard undoubtedly intended it to be. It was also most fortunate that someone had the foresight to deposit that 1979 *Folia Mendeliana* in our archives’ Mendel box—without that vital bit of information, the rest of the Mendel collection might never have been found.

There is no simple explanation for why Mendel’s groundbreaking discoveries were overlooked for so long; as Edward O. Dodson wrote in 1955, “there have surely been few if any discoveries of comparable magnitude that have been so completely ignored in the time of the discoverer.” Although Mendel during his lifetime never achieved the recognition for his work that he deserved, he believed that history would

eventually establish his reputation. As Abbot Barina recalled to Father de Waegenare, “Mendel was firmly convinced of the importance of his discoveries. He always said: ‘Meine Zeit wird schon kommen’—my time will come some day.” Those words proved prophetic when his fame was secured around the turn of the century after other scientists replicated his experiments and verified his principles. Interest in the monk and his work continues to this day, with the exhibit now in Chicago making him accessible to a wider audience. Thanks to Bishop Howard and Father de Waegenare, Gregor Mendel will be remembered not only as a man of science but also as a man of faith.

Acknowledgements

I thank the following for their contributions and assistance for this series: Mrs. Laryl Lee and Mr. Alfred Delker, Dr. Edward O. Dodson, Dr. Peter Dodson, Dr. Fred Humphreys, Sr. Margaret Stallmeyer, CDP, Sr. M. Joan Terese Niklas, SND, Sr. M. Laurence Budde, SND, Ms. Anna Nasmyth, Mr. Jim McKellogg, Dr. R. Tod Highsmith. Special thanks to Doctor Peter Dodson for returning his father’s collection to the Diocese of Covington. (See his 2008 article, “My Father and the Monk—In Praise of Venerable Men,” *American Paleontologist*, Vol. 16, No. 1: 24-28).

This article originally appeared in four installments in the *Messenger*, the newspaper of the Diocese of Covington: February 2, 2007; March 9, 2007; May 4, 2007; May 11, 2007. The author updated it November 2007–February 2008 in light of new sources found in the Dodson collection. The narrative as of October 27, 2007 did not appear in the original 2007 *Messenger* series or in the November 16, 2007 issue that told of the return of the Dodson collection.

+

BISHOP HOWARD–THOMAS MORE COLLEGE MENDEL COLLECTION

Inventory of Primary Mendel Documents in German with English Translations

Available online at

www.thomasmore.edu/library/mendel_collection.cfm?group=The%20Mendel%20Collection

1. Sept. 12, 1834 copy of Mendel’s baptismal record of July 20, 1822 (copied for his entrance into the k.k. Gymnasium in Troppau). (44)
2. Feb. 12, 1838 copy of Mendel’s vaccination certificate of June 11, 1823. (45)
3. Mendel’s academic record from Troppau, July 31, 1838. (46)
4. Aug. 7, 1840 [Latin only] (47; Nr.83)
5. Frederich Franz to “Esteemed Sir Colleague,” July 14, 1843, recommending Mendel and another student as candidates to the monastery. (53)
6. Sept. 7, 1843 – [German only] (48)
7. Abbot Napp to Bishop, Sept. 27, 1843, announcing reception of Mendel and three others into the Novitiate. (15.6; No.392)
8. Sept. 27, 1843 – [German only] (87; No.396.)
9. Mendel’s religious profession as a brother, Dec. 6, 1846. [Latin only] (15.6b)
10. Abbot Napp to Bishop, July 15, 1847, asking permission to ordain Mendel a subdeacon, deacon and priest. (15.7; z.269)
11. Abbot Napp to k.k. Landes – Præsidium, July 20, 1848 [1847], asking permission to ordain Mendel. (15.8; z.270)
12. Bishop to Abbot Napp, July 21, 1847, assenting to Mendel’s ordination. (15.9; 390)
13. Mendel’s exam grades 1846–1848, June 30, 1848. [Latin only] (15.10)
14. Summary of Mendel’s Academic career, 1834–1848. [In Latin and German] (Not numbered)
15. Gov. Lasansky to Mendel, Sept. 28, 1849, appointing him as an assistant teacher at the Znaim Gymnasium. (16.11; Nr.35338)
16. Abbot Napp to Bishop, Oct. 4, 1849, affirming Mendel’s appointment as assistant teacher. (16.11b; z.202)
17. Ambrosious Spallek, Director of Znaim Gymnasium, April 10, 1850, commending Mendel’s teaching skills and zeal. (16.13)

18. Mendel's autobiography submitted April 17, 1850 at Znaim. [German and two English versions, the typed copy is from File of Rev. Libert de Waegenaere, Diocese of Covington Archives] (Not numbered)
 19. Znaim Faculty and Ambrosius Spallek to Mendel, May 25, 1850, attesting to his religious life and affirming his certificate of application. (16.12)
 20. Dr. Schindler of the Board of the k.k. Technical School in Brunn to Mendel, June 6, 1851, stating that the teacher has recovered and Mendel is no longer needed. (16.16; No.211)
 21. Certificate for Travel for four years, Vienna–Brunn, Oct. 27, 1851, including Mendel's biographical information to date. (16.14; No.249)
 22. National: Enumeration of Mendel's studies, 1852. (17)
 23. Report of the Zoological and Botanical Soc. Meeting in Vienna, 1853, at which Mendel reported on the attack of a butterfly larva. [in German and English] (19)
 24. Report of the Zoological and Botanical Soc. Meeting in Vienna, 1854, at which Mendel reported on a dangerous insect. (18)
 25. Anthony Mendel to Son (Gregor), Aug. 23, n.y., concerning Mendel's sister's wedding. (20)
 26. Abbot's permission for clergy, including Mendel, to join the Society for Perpetual Adoration at the Bishop's invitation, April 13, 1860. (21)
 27. Silesian Agriculture Society to Mendel, April 16, 1860, announcing his election as a judge for the plant exposition. (22; n.51/g.s.)
 28. Tabulation of Votes showing Mendel's election as Abbot, March 30, 1868. [Latin only] (Not numbered)
 29. Report on Mendel's election and installation as Abbot, 1868. (23)
 30. Dean of Cathedral to Bishop, April 7, 1868, announcing Mendel's election as Abbot. (24)
 31. Bishop to Baron, April 14, 1868, announcing Mendel's election as Abbot. (25)
 32. Poche, m.p. to Bishop, May 3, 1868, announcing His Majesty's cognizance of Mendel's election. (26; Nro.1803./pr.)
 33. Mendel to k.k. Administration, Jan. 31, 1870, asking cancellation of Religion Fund Payments due to the Monastery's hardships, especially under Prussian occupation in 1866. German: (43) English: (37)
 34. Dec. 1870 – [German only] (64)
 35. Itinerary of Mendel's trip to and from the Congress of German Cultivators of Bees in Kiel, Sept. 12–14, 1871. (27)
 36. Brunn, Oct. 25, n.y., listing Mendel's accomplishments and praising him as a priest and scientist. (28)
 37. "Read before the Chapter," 1875, listing changes dividing services. (29)
 38. "Extract of one of Mendel's letters to the Governor's Office," Nov. 1875, dissenting from state laws regarding churches. (30)
 39. Mendel to k.k. Administration, April 10, 1879, protesting coercive measures taken against him and monastery property. (42)
 40. June 1879 – [German only] (65)
 41. June 29, 1880 – [German only] (66; z.57)
 42. Aug. 16, 1882 – [German only] (63)
 43. Bishop Bauer, Jan. 7, 1884, on Mendel's death. [Latin only] (30)
 44. Declaration of Death of Mendel, Jan. 7, 1884. (32; 477 St.76)
 45. Allocution of Bishop Bauer to the convention before the election, 1884. [Latin only] (31)
-

The Papers of William Bateson and Alan Geoffrey Cock at Queen's University

Donald R. Forsdyke

Queen's University, Kingston, Canada

forsdyke@queensu.ca

WILLIAM BATESON PAPERS

WILLIAM BATESON (1861–1926) brought the work of Gregor Mendel to the attention of the English-speaking world and made fundamental contributions to genetics. The early history of his papers is in previous issues of this newsletter (Coleman 1968; Cock 1977; Harvey 1985) and in a biography (Cock and Forsdyke 2008). The papers were assembled by Bateson's wife, Caroline Beatrice Durham. Following his death she appealed publicly for further letters. Following her death in 1941 the papers passed successively to her friends Alan and Nora (*née* Darwin) Barlow in England, to her son Gregory Bateson in the USA, and finally to his daughter Mary Catherine Kasserjain, who stored them in the loft of an outhouse at her home in Hancock, New Hampshire. In 1964 a selection (perhaps 20 percent of the whole) was borrowed by biohistorian William Coleman, who deposited microfilms at the American Philosophical Society (APS) Library in 1967.

In 1975 the papers were inspected by sociologist David Lipset and geneticist Alan Cock. With the approval of Gregory and Mary Catherine, it was agreed that Lipset would take the documents deemed most relevant to Gregory for archiving at the University of California, Santa Cruz. Cock would "repatriate" the remainder for curation at the University of Southampton, with the aim of eventual deposition in the Library of the University of Cambridge. In a progress report Cock (1977) gave a brief survey of the materials and appealed for further items for the biography he intended to write. A draft of an early chapter was reviewed by Gregory Bateson (Cock 1980). In his account of the life of Gregory Bateson, Lipset noted Cock's intent to write a biography of Gregory's father (Lipset 1980; p. ix).

William Bateson was founding director of the

John Innes Horticultural Institute at Merton in Surrey, which has since relocated to Norwich. As Cock's curation progressed, copies of the "Hancock collection" were made for the Institute, which had appointed an Archivist (Rosemary Harvey) and was seeking additions to the materials Beatrice Bateson had not removed in 1926 (Harvey 1985). A copy was also made for Cock's personal use. While he was able to complete the curation, and published several valuable papers, difficulties finding a publisher and failing health determined that the intended biography would not be completed.

In 2004 Cock's copy of the "Hancock collection," together with his personal papers and other Bateson materials he had gathered, were transferred to me in Canada, with the understanding that I would complete the work and secure a publisher. I was able to add to the work in various ways—identify a link between Bateson and Charles Darwin's research associate, George John Romanes (1848–1894; Forsdyke 2001), clarify the relationship with Samuel Butler (1835–1902; Forsdyke 2006a, 2009), and update the science (Forsdyke 2006b). Following final submission to the publisher in the fall of 2007, the Bateson and Cock papers were further curated, and annotated online catalogues prepared. I deposited the papers in the spring of 2008 in the Archives of Queen's University (Forsdyke 2008a).

ALAN COCK PAPERS

THE COCK PAPERS in the Queen's University Archives provide a key to the provenance of the William Bateson papers which are primarily located in the Cambridge University Library, with copies at the John Innes Centre (Norwich, UK) and the Queen's University Archives (Alan Cock's personal copy; Forsdyke 2008b). The papers illustrate the

special difficulties in obtaining funds for historical research and tracing source materials in the pre-computer era.

Alan Cock was born at Stratford in east London in 1926. After graduating in Zoology at Cambridge University in 1947, he worked for a decade as research assistant to Michael Pease at the Agricultural Research Council (ARC) Poultry Genetics Unit, Cambridge. Michael Pease had been the assistant of Reginald Punnett who, prior to becoming the first Professor of Genetics at Cambridge in 1912, had been the assistant of William Bateson. Thus, Cock could claim the latter as his scientific great-grandparent. The Pease laboratory was still using Bateson's shorthand system for recording the characters of newly hatched chicks, so Cock was well prepared to analyze the original Bateson–Punnett notebooks held at the Cambridge Department of Genetics.

Around 1970 he made a decisive career shift from genetics to biohistory with the aim of writing a definitive Bateson biography. To this end, he repatriated the William Bateson papers from the USA in 1975 and began their curation and cataloguing. In the course of this work he corresponded with many leading mid- to late-20th century scientists and historians. Yet, while he wrote several important papers and made a start on the biography, dogged by illness (bipolar depression and a pituitary tumor) his aim was not achieved. However, in 2008, three years after his death, the biography was published with assistance from myself—another scientist-turned-historian (Cock and Forsdyke 2008).

Cock's switch to biohistory followed a distinguished scientific career. In 1957 he moved from Cambridge to the Poultry Research Centre, Edinburgh, where he obtained a doctorate in Genetics. In 1964 he joined Professor Leslie Brent as Lecturer in the Department of Zoology (later Biology) at the University of Southampton. Of undoubted interest to Brent, a transplantation immunologist (Brent 1997), would have been Cock's collaboration with Morten Simonsen, which provided a fundamental understanding of the graft-versus-host reaction. Up to 2006 their seminal paper (Cock and Simonsen 1958) had received 95 citations. In the 1960s Cock and Stephen Jay Gould were world leaders in the study of animal growth and form (allometry) and both wrote influential reviews (Cock 1966; Gould 1966). By 2008 Cock's (more mathematical) review had received 219 citations, and Gould's 1015. The citations of Cock's pioneering work on the phenomenon of dosage

compensation in fowl (Cock, 1964) have resurged in recent years (52 total). Following his switch to biohistory, Cock was a tutor in the History of Science at the Open University (1976–1979). In 1982, due to ill health, his lecturing duties at the University of Southampton were reduced to part-time.

Cock's many science-related correspondants included William Coleman, Cyril Darlington, Stephen Jay Gould, John B. S. Haldane, Rona Hurst, David Lipset, Donald MacKenzie, Bernard Norton, Robert Olby and Curt Stern. Of these, particularly captivating is the correspondence with Rona Hurst, the wife of Bateson's "bulldog" Charles Chamberlain Hurst (1870–1947)—a major opponent of the biometrician Karl Pearson (Hurst, 1975, 1977, 1980). Rona Hurst's magisterial account of the early days of genetics, *The Evolution of Genetics*, was stone-walled for formal publication by Darlington, but copies are held in the libraries of Cambridge University and the APS. (Likewise, Rosemary Harvey's five volume treatise—*William Bateson and the Emergence of Genetics* (2000)—rests unpublished at the John Innes Centre.) The extensive correspondence with granting agencies reveals the difficulties obtaining support for historical work. Nevertheless, in 1981 there came a grant from the Wellcome Trust to compile a catalogue and a computer-based index of the Bateson papers, a joint project with the John Innes Centre; the latter ended up cataloguing by incremental addition, whereas Cock's system permitted new items to be logically placed by interpolation.

Although not reflected in the correspondence, despite a Methodist upbringing Cock was a religious agnostic. He held memberships in the Fabian Society, the Labour Party, the Campaign for Nuclear Disarmament, and the Euthanasia Society (Cock 1991). Indeed, he met his second wife, Marta Holmes, at the New Left Club in Edinburgh. He met his Austrian first wife, Elsbeth, in 1948 at the Poultry Genetics Unit, and they married in 1951 in Vienna. Her father, Adolf Josef Staffe, had been Rector at the Universität für Bodenkultur (University of Agricultural Sciences) where one of the three discoverers of Mendel's work, Erich von Tschermak-Seysenegg (1871–1962), held the Chair of Plant Breeding until 1941. Staffe himself had particular interests in dairy farming and microbiology, and the genetics of the Lipizzan horses at the Spanish riding school in Vienna. In the post-war years he worked for the United Nations FAO with special responsibilities in Columbia, South America and in Cameroon, Africa

(Liebscher 1958). Elsbeth died of cancer in 1961 leaving two daughters (Sybil and Christina). In 1963 Cock remarried and there were two further children (Hannah and Oliver). With their support, in 2004 Sybil arranged shipment of the Bateson–Cock papers to Canada.

Collection Contact Information

Dr. Paul Banfield, Archivist
 Queen's University Archives
 Kathleen Ryan Hall, 11 Medical Quadrangle
 Kingston, Ontario
 Canada K7L 3N6
 613-533-2378
 email: archives@queensu.ca
 website <http://archives.queensu.ca/index.html>

References

- Brent, L. 1997. *A History of Transplantation Immunology*. San Diego: Academic Press.
- Cock, A. G. 1964. Dosage compensation and sex-chromatin in non-mammals. *Genetical Research* 5, 354-365.
- Cock, A. G. 1966. Genetical aspects of metrical growth and form in animals. *Quarterly Review of Biology* 41, 131–190.
- Cock, A. G. 1977. The William Bateson Papers. *The Mendel Newsletter* 14, 1-4.
- Cock, A. G. 1980. Rona Hurst (1897–1980) and Gregory Bateson (1904–1980). *The Mendel Newsletter* 19, 5-7.
- Cock, A. G. 1991. Euthanasia aided by a relative; the William Tell factor. Unpublished document, Southampton, October 1991 (see *Addendum* to Forsdyke 2008b).
- Cock, A. G. and Forsdyke, D. R. 2008. “*Treasure Your Exceptions.*” *The Science and Life of William Bateson*. New York: Springer.
- Cock, A. G. and Simonsen, M. 1958. Immunological attack on newborn chickens by injected adult cells. *Immunology* 1, 103–110.
- Coleman, W. 1968. The Bateson Papers. *The Mendel Newsletter* 2, 1-3.
- Forsdyke, D. R. 2001. *The Origin of Species, Revisited*. Montreal: McGill-Queen’s University Press.
- Forsdyke, D. R. 2006a. Heredity as transmission of information. Butlerian intelligent design. *Centaurus* 48, 133-148.
- Forsdyke, D. R. 2006b. *Evolutionary Bioinformatics*. New York: Springer.
- Forsdyke, D. R. 2008a. *William Bateson Papers* (BP) list. <http://post.queensu.ca/~forsdyke/bateson9.htm>
- Forsdyke, D. R. 2008b. *Papers of Alan Geoffrey Cock (1926–2005)* relating to his William Bateson biography project. <http://post.queensu.ca/~forsdyke/acpapers.htm>
- Forsdyke, D. R. 2009. Samuel Butler and human long-term memory. Is the cupboard bare? (submitted for publication).
- Gould, S. J. 1966. Allometry and size in ontogeny and phylogeny. *Biological Reviews* 41, 587-640.
- Harvey, R. D. 1985. The William Bateson letters at the John Innes Institute. *The Mendel Newsletter* 25, 1-11.
- Hurst, R. 1975. The Hurst collection of genetical letters. *The Mendel Newsletter* 11, 1-7.
- Hurst, R. 1977. Addition to the C. C. Hurst collection. *The Mendel Newsletter* 13, 6-7.
- Hurst, R. 1980. Deposition of the Hurst botanical material. *The Mendel Newsletter* 19, 8-10.
- Liebscher, W. 1958. In memoriam Adolf Josef Staffe. *Der Fortschrittliche Landwirt* 8 (13), 125; (see Joan Gladwell’s translation in *Addendum* to Forsdyke 2008b).
- Lipset, D. 1980. *Gregory Bateson. The Legacy of a Scientist*. Englewood Cliffs: Prentice-Hall.

2010–2011

**Resident Research Fellowships
in Genetics, History of Medicine and Related Disciplines**



The American Philosophical Society Library in Philadelphia offers competitive short-term funded fellowships supporting in-residence studies with its collections.

The American Philosophical Society Library

We are a leading international center for historical research with holdings renowned for their depth and interdisciplinary value to scholars. Resources include more than eight million manuscript items, 250,000 printed volumes, thousands of maps, prints and photographs, and thousands of hours of audio recordings.

Among the Library's most well known collections are the papers of many noted scholars, academics and statesmen particularly of the 18th through 20th centuries. Significant research collections of far-reaching social and political interests embrace topics as diverse as first-person historical accounts and the official records of research organizations. Our holdings have great depth in many fields of history, science, and art, conserving centuries of intellectual pursuits, professional achievements and the personal

reflections of men and women worldwide. The Library does not hold collections on philosophy in the modern sense. Interested parties unsure if the Library has materials related to their research are invited to inquire.

Our collection strengths include, but are not limited to

- Studies in Genetics and Eugenics
- History of Physiology, Biochemistry and Biophysics
- American and European Science and Technology
- Natural History Through the 19th Century

History of Genetics Collections

The American Philosophical Society began specifically collecting manuscripts and books relating to the history of genetics in the early 1960s at the

instigation of the mouse geneticist L. C. Dunn, but it was the project conducted by H. Bentley Glass between 1977 and 1985 that led to truly outstanding growth. Funded by the Mellon Foundation, Glass surveyed and indexed the existing collections at the library and prepared a printed guide to them for researchers. This was the original basis for the comprehensive guide to the American Philosophical Society's own collections in genetics, which include the papers of L. C. Dunn and H. Bentley Glass, among numerous others.

See the web version of Glass's guide to the APS holdings at

www.amphilsoc.org/library/guides/glass

This online guide contains links to the collection descriptions prepared by Glass, to abstracts of some collections acquired since, and, when available, the complete finding aids. Researchers must also examine our comprehensive, up-to-date online finding aids for all collections through our main page at www.amphilsoc.org/library (and there see the drop-downs under "Library").

The APS continues to seek out new collections in the history of genetics and to make them available to scholars.

Library Resident Research Fellowships

Candidates are

- U.S. citizens or foreign nationals
- Holders of the Ph.D. or equivalent
- Ph.D. candidates having passed their preliminary examinations
- Independent scholars

A stipend of \$2,000 per month is awarded for 1 to 3 months. Awardees may take their fellowships at any time between 1 June 2010 and 31 May 2011. During the time of their fellowship, Fellows must be in residence in the Library for consecutive weeks.

Applications are evaluated based on the quality of the project, the letters of recommendation, and the *relevance of the Library's collections to the project*. Candidates living more than 75 miles from Philadelphia receive some preference.

Next application deadline: 1 March 2010

Notifications are sent by early May

Information and instructions for applying for Library Resident Research Fellowships are on our website: www.amphilsoc.org/grants/resident.htm

Specific inquiries relating to the Library fellowship program may be sent to Libfellows@amphilsoc.org

Inquiries relating to the APS's collections may be sent to manuscripts@amphilsoc.org



THE AMERICAN PHILOSOPHICAL SOCIETY LIBRARY
105 South Fifth Street, Philadelphia PA 19106
U.S.A.

215-440-3400 www.amphilsoc.org/library