

# Precise Zoological Information: The Concilium Bibliographicum, 1895-1940

by Michael K. Buckland and Colin B. Burke

## EDITOR'S SUMMARY

Cognizant of the benefits and challenges of deep bibliographical searching for zoological resources, Herbert Haviland Field, an American zoologist, established the Concilium Bibliographicum in Zurich, Switzerland, in 1895. The Concilium provided bibliographic data on articles from over 2,000 journals in 20 languages and developed the zoology section of the Universal Decimal Classification (UDC) system, a new system in 1895 that improved search through flexible ordering of topical facets. The institute published annual indexes of zoological literature that could be tailored for specific interests; it later introduced card files for new zoological species and other services. But the Concilium faced insurmountable challenges. Poor funding, international hostilities leading to World War I and Field's death in 1921 handicapped daily operations, affecting the Concilium's language use policy, currency and comprehensiveness of references and staffing to maintain the index. An admirable effort that would have been well suited to modern digital solutions, the Concilium was suspended during the war and ceased operations in 1940.

## KEYWORDS

information science history	bibliographies
bioinformatics	bibliographic records
biology	

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In the early 20th century the most advanced bibliographical information service in zoology and related areas was provided by the Concilium Bibliographicum, an institute established in Zurich, Switzerland, by a brilliant U.S. zoologist named Herbert Haviland Field. The service was designed with careful attention to key issues in bibliography, but was hampered by funding difficulties, insufficient subscribers, war-time disruptions and Field's death in 1921. The Concilium ceased operations in 1940 and, like its idealistic founder, is now little remembered.

## Origins

After experiencing the difficulties and the benefits of exhaustive bibliographical searching, Herbert Field dedicated himself to meeting the challenges of bibliographical access in zoology. (See also related paper in this issue of the *Bulletin*: "Herbert Haviland Field (1868-1921): Bibliographer of Zoology.")

Following very widespread consultation and detailed planning, Field established the Concilium Bibliographicum in Zurich, Switzerland, in 1895, with small branches in Galicia (now Poland), Hungary and Russia, to draw on specialized language skills. The Latin name could be translated as "bibliographic association" or "league." The Latin meaning of *concilium* is a group working together.

The scale of the zoological literature was estimated in 1909 as 10,000 articles a year published in over 2,000 different journals scattered among some 100,000 writings that do not interest zoologists and in some 20 different languages [1, p. 5]. The specifications of the project were (i) to be as complete as possible; (ii) subject access to primary and secondary content, not just what the title indicated; (iii) annotation or a summary sufficient to indicate precisely for each item the fundamental idea and results reported;

(iv) publication on cards to be interfiled locally with the subscriber's previously received cards so that the two-weekly current awareness subscription would cumulate over time into a locally available complete and unified bibliography. Naturally this required every item to be examined by skilled subject specialists; and, of course, (v) to have the cards delivered to subscribers as promptly as possible [2].

### The Universal Decimal Classification (UDC)

In 1895 a new, highly sophisticated classification was under development by Paul Otlet, Henri La Fontaine and others at the International Institute for Bibliography in Brussels (IIB, later FID, commonly referred to as the Brussels Institute): the Universal Decimal Classification (UDC). The Concilium adopted it and took responsibility for developing the section for zoology.

The UDC is an elaboration of the Dewey Decimal Classification (DDC). The most important change was development of the Dewey system's uniform subdivisions, which could be added as suffixes to a main class number to qualify it by place, time, format and in other ways. For example, in the DDC, adding the suffix 0942 signified "in Great Britain." In the UDC this system of subdivisions was so greatly expanded that the UDC became

basically a faceted classification. Unlike DDC, each qualifying subdivision (facet) was identified by punctuation that affected the filing order. For example, "German language primers on office management in the UK" could be precisely and

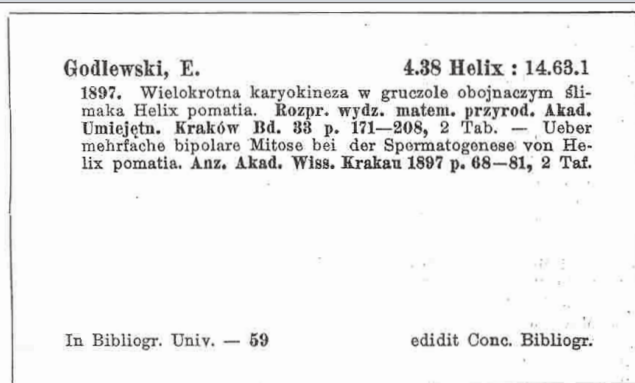
completely represented by 005.912=112.2(075)(410). The advantage of using punctuation rather than position to clearly demarcate different descriptive facets is that changing the order does not change the meaning. So rearranging the order allows filing and search by facets other than the primary topic. The Concilium frequently published the UDC class schedules that it was responsible for with its associated alphabetical index, under the title *Conspectus*. Sometimes, as in 1898, an explanatory introduction was also provided [3].

Figure 1 shows a card for an article on multiple mitosis in the spermatogenesis of the edible snail. The UDC subject coding at the top right starts with the main topic (in bold type), the class number for land snails 594.38, but since nearly all of the Concilium's records relate to class 59 Zoology, the initial 59 is omitted for economy. (Similarly the initial 56 for paleontology is omitted.). The subject matter is then narrowed to the genus *Helix*, hence **4.38 Helix**. A colon represents a Boolean AND in this example, followed by the second element 14.63.1 (which is 59.14.63.1 for spermatozoa, again without the initial 59). In such a case, a second subject card would also be printed with the Boolean elements reversed, thus 14.63.1 : **4.38 Helix**, so that this record would also be found when searching under spermatozoa as well as under snails. The two different arrangements of the same two components were synonyms, but the facet order determined where a card would be filed. "There remains, however," explained a Concilium guide, "a third need unsatisfied. None of the foregoing arrangements can be of any service to a person who merely wants to know what had been published in regard to mitotic cell division. . . . so that we are obliged to issue a third edition [i.e. card] in which 14.63.1 Spermatogenesis is replaced by 18.15 Cell-division." Hence the record is also filed at 18.15 : **4.38 Helix**. (For other worked examples see the *Conspectus* [3] and Hoyle and Nördlinger [4].)

### Multiple Services: Economy of Scope

In contrast to earlier media, digital technology allows different products to be generated from the same data, a feature known as economy of scope. Nevertheless, the Concilium managed to generate multiple related services

**FIGURE 1.** Concilium Bibliographicum card for an article on multiple mitosis in the spermatogenesis of the edible snail



(Multiple bipolar mitosis in the Spermatogenesis of *Helix*).

from the same records. One product was the printing of bibliographical records in annual cumulations that was issued as a supplement to leading journals in the field or subfield. The central product, bibliographical indexing of zoological literature, was published as a supplement entitled *Bibliographia Zoologica: diario “Zoologischer Anzeiger” adnexa* (Zoological bibliography: Journal supplement to the *Zoologischer Anzeiger*). It replaced and continued the “Literature” section that had been a notable feature of that journal. Records relating to physiology were published as *Bibliographica physiologica* and issued as a supplement to the *Zentralblatt für Physiologie*. Others sets of records were issued as *Bibliographica cytologia*, as *Bibliographia protozoologica* and, for comparative anatomy, *Bibliographia anatomica*. A variation on this format was to print on one side of the page only so that subscribers could cut out the entries they wanted and paste them on to cards for filing.

These annual bibliographies were provided to gain cooperation from various journals and for publicity, but it was done reluctantly. Field was adamant that the primary medium for bibliographical publication should be standard 75 x 125 mm (3 x 5 inch) library cards comparable to the card service later developed by the Library Congress. Cards could be maintained as a separate file by the subscriber and possibly interfiled locally with other cards such as a library catalog. Concilium cards were filed in the huge universal bibliography maintained at the International Institute for Bibliography in Brussels, as noted in abbreviated Latin at the base of the card in Figure 1.

Card sets were sold by subscription or by special order. A subscription provided a current awareness service, whether or not the cards were filed. When filed, they provided a complete retrospective bibliography back to when the cards began production. It was hoped that existing or future published retrospective bibliographies would tidily cover the period before Concilium cards began to be available or, possibly cards might be created retroactively to bridge the gap and achieve completeness. The detailed classification allowed standing orders tailored to whatever range of interest the subscriber had. One could, for example, subscribe to records relating to insects in Palestine.

In 1901 a separate card file of new species and genera was started. It was

indexed by taxonomic order and by geographical area and so allowed Boolean combinations, e.g., new reptiles discovered in Japan. This Catalog of New Species, undertaken at the instigation of the fifth International Zoological Congress in Berlin in 1901, generated 208,000 records by 1909. “It is an epitome of systematic zoology,” announced the Concilium proudly, “showing where and by whom each species was first described and in what locality it was collected. Duplicate entries, classified geographically, permit the student to provide himself with information in regard to all species collected from a given region, as Cuba for example.” [1, p. 8] It was a valuable resource, but it generated no income and funding was lacking to make it into a saleable product.

Guide cards and filing cabinets were also available for sale.

### Nationalism

The Concilium was founded on international collaboration at a time when imperialism, strenuous nationalism and international competitiveness were at a peak and would soon lead to the pointless slaughter of the First World War. This political situation made funding for an international initiative difficult. It also made language policy a sensitive issue. First Latin, then French had been the leading language of science. German had become the primary language in chemistry. The trend was towards English. Caution was needed.

Herbert Field trod carefully. English, French and German were adopted as the Concilium’s three official languages and formal documents would be issued in all three languages. Less formal documents would use one or more of these three languages as convenient. Latin, regarded as neutral, was used for the name of the Concilium itself and also for the titles of its publications. The Concilium’s newsletter was *Annotationes Concilii Bibliographici* and its user guide to the UDC was *Conspectus methodicus et alphabeticus numerorum “Systematis decimalis” ad usum bibliographiae anatomicae* [etc.] even though neither contained text in Latin. The bibliographical periodicals had Latin titles.

At that time academic zoologists could be expected to cope, more or less, with English, French, German and zoological Latin. But choice of language arose when the title of an article was not in English, French or



German and might need to be augmented with a supplementary note if the title did not adequately reflect the content. The policy was adopted that articles in English, French and German would have notes in the same language, if needed. Titles in Italian, Spanish and other romance languages would be translated and, if need be, expanded in French. Germanic languages other than German would be translated into German. Slavic languages would be translated into German (as in Figure 1) or into English. A tendency towards English was excused on the grounds that most of the subscribers to the Concilium's services were English-speaking.

The supplementary note could be quite extensive and included mention of new species and genera reported in the text.

### Current Awareness Versus Completeness

There were demands from working scientists for current awareness and less interest than Field would have liked in complete retrospective searching. The Concilium argued that for most specialized topics too few items appeared each year to justify a specialized current awareness journal, that waiting for an accumulation of records caused excessive delay and that incorporation with other topics would result in having to sift through excessive extraneous matter and search through too many issues of the journal to find even a handful. So, the only adequate solution is that afforded by the card catalog at the scholar's location in which all references are gathered at one point, new and old, side by side [6, vol 2, pp. 10].

### Technological Challenge

"The intercalation of the cards as they appear may well be performed by a janitor or simple laboratory aid. Such unskilled labor is just as efficient as the work of a trained scientist could be," it was claimed [1, p. 8]. This assertion is questionable. The UDC is not easily understood. Letters and most punctuation marks affect the decimal filing. Further, the labor required to file a single additional card increases steeply as the size of the file increases, at something like the square of the number of cards already filed. Over time this filing challenge becomes a significant burden for subscribers and, if neglected, such systems begin to break down.

### Staffing

Total staff appears to have peaked at 13 in 1906. Among them was Marie Ruhl, who was Field's chief assistant for many years, and Hermann Jordan, a German expert on sea slugs, who edited the *Bibliographia physiologica*. Also, for a while, Adolphe Law Voge, an engineer who had become interested in corporate special libraries and later worked at the Library of Congress, participated. On Field's death, Johannes Strohl, a zoologist at the University of Zurich, became Field's successor as director. Strohl had previously served as a classifier and vice-director.

### Economics and Demise

By the end of 1910 the Concilium had distributed over 30 million cards. However, lack of funds and Field's illnesses chronically hampered the work. The basic price per card was about six cents (in 2016 U.S. dollars) for a full subscription and 12 cents for partial subscriptions. Collecting subscription

payments was always a problem. The number of subscriptions peaked around 700 but then steadily declined to half that by 1928.

Field tried to make the Concilium self-supporting by diversifying his products and begging for subsidies. He took out loans backed by his own assets and took a salary that never covered his expenses. Only in 1906 did subscriptions and Swiss subsidies cover the operating cost but left nothing for capital expenses or debt reduction. In 1908 a fine, but expensive, new building was occupied (Figure 2).

FIGURE 2. Concilium Bibliographicum building, Zurich



The outbreak of the First World War forced a suspension of service, yet costs continued, and in 1921 Herbert Field died. The Concilium never really recovered. The paid subscriptions were not close to covering the costs, and there was strenuous competition for grant support. After years of struggle, the outbreak of the Second War again rendered operation impossible and the Concilium closed in 1940 and was liquidated in 1943. It and Herbert Field were forgotten.

### Retrospect

It is striking how the Concilium's methods anticipated later computer-based services in the late 20th century. Tasks that proved so onerous for the Concilium – sorting and filing, selective dissemination, maintaining an

inventory of cards, reprinting extra card sets when needed and permuted subject entries – were all well-suited for delegation to digital computers.

### Sources

The only detailed modern account is in Colin B. Burke's biography of Herbert Field, *Information and Intrigue* [5]. Good starting points in contemporary literature are the *Conspectus*[3] and *Annotationes Concilii Bibliographici*, a newsletter issued by the Concilium which reported not only on the development of the Concilium and its services but also controversies related to design and policy issues, and articles introducing the Concilium [6]. See also the papers listed below. The Hathi Trust now makes several Concilium publications openly available. ■

### Resources Mentioned in the Article

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### Additional Resources

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