Literature Citations, A Clinico-Pathological Study, with the Presentation of Three Cases

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An area of reference work which is both a bane and a challenge to the medical librarian is the tracing of inaccurate, false, or "ghost" references which creep so insiduously into the literature. After a certain amount of experience the librarian develops a feeling for the psychopathology of these errors of every day library life, and by various ruses and devices which become an unconscious part of his armamentarium, is able to restore most of them to good form. It has often seemed to me, however, that various of these errors, bibliographic neuroses, if you will, exhibit a kind of pattern, so that if we were able to collect a sufficient number of recorded cases, we would be able to ferret out some of the underlying causes of the incorrect citation, and thus be able to approach them with more science and less art. In addition making these bibliographic cures a matter of record would give the librarian a chance to share his feeling of satisfaction of having solved a thorny bibliographic problem, a satisfaction which must have something in common with that of the detective in solving a case, or with that of the analyst in pinning down the source of a neurosis. Again it might provide us with a series of case studies which would aid us in the difficult task of teaching this kind of reference work, which is sometimes regarded as being possible only for those who have some sort of intuitive second sense.

There have been very few systematic studies of errors in literature citations. An article published in a German medical weekly in 1913 with the imposing title,"On the Psychology of False Literature References"(1) cites an earlier study in which 10,000 references were checked for a textbook on cancer, of which fully 10 percent were found to be incorrect, but does not state what the nature of the errors were. The article goes on merely to give typical examples of the errors encountered. This brief essay does not pretend to offer any systematic study of such magnitude, but merely to present a few comments on the subject along with an account of three cases brought to successful termination which may elucidate some of the problems involved. It is unnecessary to state that the unsuccessful cases, in bibliographic therapeutics, as in other fields of endeavour, seldom become a matter of record.

It is fairly apparent that the errors which most frequently result in incorrect citations are either verbal, visual or calligraphic, errors of hearing, seeing or writing. In this area we have perhaps something to learn from the specialists, such as the communications engineers and the graphologists. The communications technicians,(2) for instance, tell us that the consonants are more difficult to recognize than the vowels in speech, and that the speech sounds, *v*, *f*, and *th* account for more than half of the errors in recognition of the fundamental speech sounds. The speech sounds they find most commonly confused are the following:

b—p	v—f	z—s	zh—sh
d—t	j—ch	g—k	

We don't have to be graphologists to know that the two symbols most commonly confused in writing are *n* and *u* and *i* and *e*. Many of the errors in printing are the results of inversions, especially in the printing of dates, and we know that references sometimes cited as being published in 1901 may turn out to have appeared in 1910. When the author *Niehaus* appears in print in a reference as *Nichaus*, it can be ascribed to a simple typographical error, although it is difficult to account on the same grounds for the transformation of *Ingelsrud* into *Inelsand*. Some errors are the result of simple inversions of names. These are sometimes easy to detect, when the names are in a familiar language, or of some repute. For example, it took little courage to decide that the name *Garrison Fielding* cited in a German article published in 1937 was our well known medical historian and bibliographer, but we have also learned that it is sometimes wise to check a recalcitrant reference under both parts of a name, especially when it is cited by someone writing in another language.

Other errors are sometimes the results merely of misconceptions. We know how frequently French authors are cited with the initial "M" when the original article had used this only as a courteous form of address. I have it only on hearsay evidence that a paper by *Sir William Hunter, Bart.* was once found cited as by *Bart, W. H.* The classical case of "O. Uplavici," however, is well documented. The Czech *O Uplavici*, that is *On Dysentery* is the title of an important contribution to the literature on amoebiasis which was published in 1887 by Jaroslav Hlava, a professor of pathological anatomy at the University of Prague. Unfortunately, by some aberration the title got into the literature as the author, and *O. Uplavici* continued to receive credit for the contribution for some fifty years, and in one index even achieved doctoral honors, until the confusion was finally cleared up by Dobell in 1938.(3) The case of *O. S. Good* who finally turned out to be the author of the original article on Osgood-Schlatter's disease, is not exactly in the same category, but demonstrates that even eponyms can be vulnerable.

I

The first case is a paper cited as: Lindblom. Splenic aneurysm. Path. der Kreislauforgan, Lubarsch-Ostertag. Lacking a date, the author approach to the citation seemed unpromising. In such cases a subject approach through such comprehensive indexes as the *Index-Catalogue*, or definitive monographs on the subject sometimes is helpful. In fact, the list of citations at the end of a French dissertation on splenic aneurysms published in 1935 did reveal a reference which looked vaguely familiar: Lindbora. Embol. mykot. Art. lienalis (zit. in Therel. Path. d. Kreislauforgan) Lubarsch-Ostertag, 1915. Although this new source introduced an element of uncertainty about the author's name, it did give us a date to hang our search upon, and told us at least that the publication was only *cited* in *Lubarsch-Ostertag*. Further bibliographic investigation revealed the fact that Lubarsch and Ostertag were the editors of an encyclopedic work entitled: *Ergebnisse des allgemeinen Pathologie und pathologischen Anatomie des Menschen und der Tiere*, the indexes of which directed us to a monograph in the collection by C. Thorel (viz *Therel* above) which did indeed cite Lindblom, unfortunately, however, as *Lindbom*. An attempt was made in the bibliography appended to the monograph to rectify this error, but it did not quite succeed, since here he is cited as *Linkblom*, although the rest of the reference proved to be quite correct. The reference was finally reconstructed and restored to health: "Lindblom, O. Beiträge zur Kenntniss der embolischen Aneurysma als Komplikationen der akuten Endokarditidin. *Mitt. a. d. Grenzgeb. d. Med. u. Chirurg.*, 1914, 27: 912–933."

II

The next case is an example of how a counterfeit reference can persist in the literature and pass as good currency for many years. The first description of a synovial sarcoma is attributed somewhere in the medical literature to *Langenbeck (1865)* without citation. A search of the usual sources, *Index-Catalogue*, the Royal Society *Catalogue of Scientific Papers*, etc., failed to turn up the relevant title. In cases of this kind it is sometimes true that the reference librarian may panic, and go through a series of random movements similar to what is, I believe, in the field of mechanics called "searching" though with a somewhat different connotation. Here they involved searching the indexes of several volumes of *Langenbeck's Archiv* and even the *Verhandlungen* of the Berlinische medicinische Gesellschaft in which Langenbeck was for a time active, all without success. After equanimity was restored, another tested technique was tried, that of looking for a good review on the subject. In this case an article published in *Surgery* in 1937 on "Synovia" in its historical review did in fact state that: "One of the first cases of primary synovial tumor was reported in Langenbeck," and gave as reference: Langenbeck (cited by Faulkner), *Surg. Gyn. Obst.*, 1931, 53: 189. The case was not solved but at

least we had opened a trail, and we felt that the quarry was now in view. The 1931 article proved to be only another way station on our way to the final goal, because again the statement was made: "Although a case was reported as long ago as 1865 by Langenbeck, Hartman in 1922, in an excellent review of the literature, could find only 16 cases, to which he added one of his own." This statement is documented with a reference both to: Langenbeck, C. S. (!!!) *Arch. f. klin. Chir.*, 1865, 6: 573, and to Hartman. Now we had only to refer to the article in question in *Langenbeck's Archiv* (his initial is B.) to see whether our quest was finished. The page reference was correct, but the author proved to be Gustav Simon, and the article: "Extirpation einer sehr grossen, mit dickem Stiele angewachsenen Kniefelenmaus mit glücklichem Erfolge," a title which we felt with some minor modifications could be applied to our case as well. The root of the problem (psychic trauma in infancy) is revealed by referring to Hartman's article which states: "Gustav Simon described the first of this series in 1865," but by some curious transposition cites: Langenbeck, Gustav Simon. *Arch. klin. chir.*, 1865, 6: 573.

III

The last case involves two references in a French paper on heatstroke published in 1938, which in its discussion of the physiology of fatigue cites two American papers, the first in the following statement: "Les modifications chimique ont été étudiées surtout par Rakestraw de Stanford (U.S.A.)." No date is given. The second refers to the ". . . observations faite en 1924 par Levin, et Gordon Derrick sur des coureurs venant de terminer le Marathon." A search of the indexes failed to reveal any Levin or Gordon Derrick writing on the subject in the years adjacent to 1924. Although impressed by the aristocratic form of Rakestraw de Stanford's name, we dismissed the temptation to look under Stanford for the paper, and did indeed turn up in the 3rd series of the *Index-Catalogue* the following entry under *Fatigue*: "Rakestraw, N. W. (Stanford University). The effect of muscular exercise upon certain common blood constituents. *J. Biol. Chem.*, 1921, 47: 565–591." Levin and Gordon Derrick proved more elusive. Finally an almost chance reference (enter art, exit science) revealed the following entry in a list of references: "Levine, S. A., Gordon, B., and Derick, C. L. Some changes in the chemical constituents of the blood following a marathon race. *J. Am. M. Ass.*, 1924, 82: 1778–1779," obviously the one sought.

These are, of course, only a few examples of the kind of citations that are encountered in the scientific literature. Sometimes they require the art of the cryptographer to solve them, but frequently they are quite transparent. For instance, it took less than cryptographic skill to establish that "Riv. 1st. Sieroterap. ital." was in fact the *Rivista dell' Istituto Sieroterapica Italiano*, and that the "1st" was undoubtedly a misreading of the handwritten "Ist.". We

hope that with careful editing and the increased assistance of trained librarians, that the number of false and incorrect citations will be diminished, but at the same time we cannot help harboring a perverse hope that somehow a few will still remain to tantalize and amuse the medical librarian.

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