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REVIEW OF 'FORENSIC GENEALOGY' BY COLLEEN FITZPATRICK

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Book Review

Forensic Genealogy by Colleen Fitzpatrick

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These days the word "forensic" is immediately associated with DNA, but the word is more broadly used by the author of *Forensic Genealogy* to signify an explanation based on the analysis of evidence. Just over half of the book is devoted to non-genetic topics. The 220-pages are divided into three major sections and include several case studies. The book also includes a CD-ROM containing supplementary materials such as color photos, sample data files and spreadsheets related to genetic genealogy. Many of the book's footnotes are web linked and also appear on the accompanying CD, making it easy to locate the web site references. Unfortunately, the book does not include an index.

The first section of the book discusses the use of forensic methods in the detailed analysis of old photographs. It includes information such as the thickness of card stock during certain time periods (0.02-0.03" 1869-1887) and discussions about wardrobe (clothing was commonly provided by photographers and hence may not be an indication of the socioeconomic status of the subject). The second section covers the use of unusual databases such as hospital admissions records or seaman's protection certificates. The author, an expert in optical laser measurement techniques and a genealogist, clearly has had considerable experience with the photographic material and unusual databases that are the subjects of the book's first two sections.

The subject of genetic genealogy is addressed in the final section, titled *The DNA Detective*. The chapter begins with a great deal of basic material presented in a compressed manner. This could not have been an easy task for the author given her limited experience with the subject matter, and the author acknowledges that this chapter was the most difficult to write. Unfortunately, the information is presented in a manner that can confuse beginners and even undermine the confidence of more experienced readers. For example, R1b is incorrectly and misleadingly designated by the author as the Atlantic Modal Haplotype."

There are also some layout and other problems with the illustrations, figures, and tables in this section. Many of

the tables and figures are placed far from the text in which they are discussed, which makes moving through the book unnecessarily difficult. Some of the captions were apparently not updated during editing. For example, the caption for Figure 9 on page 194 erroneously refers to "Table 4" (should be 7), and the Figure 10 caption refers to "Table 14" (should be 20). Equation 6 on page 193 is missing an exponent. These editorial problems are unfortunate and detract from the flow of the discussion.

There is a discussion of the mathematics underlying the calculation of the time to the most recent common ancestor (TMRCA). Computer spreadsheets are provided as a starting point to see how such calculations can be set up. This simple model uses either a binomial or a Poisson distribution, with a single average rate of mutation specified for all loci. These are presented as starting points for those interested in seeing how these calculations are done. More sophisticated TMRCA calculators are available on the Web.

One feature that sets this book apart from others on the subject of genetic genealogy is the introduction to the use of cladograms in the analysis of groups of related haplotypes. Although there may be some question about the utility of this approach for small projects, this method of analysis may deserve more widespread consideration. The chapter describes a three-step process of creating a cladogram using Fluxus Network software.¹ Although the software discussed in the book is currently in a later release (4.1.1.2), the instructions in the book, written for Version 4.1.0.8, can be followed without difficulty. The CD accompanying the book provides sample data files that the reader can use to become familiar with the program. These sample files can also be edited so the reader can substitute his or her own data. This addresses the frustrating problem of preparing a data file in the correct and somewhat rigid format required by the Fluxus software. Although not

¹ A free download is available from:

<http://www.fluxus-engineering.com/netwinfaq.htm>.

mentioned in the book, anyone interested in using this software should explore Dean McGee's tutorial and utility program at:

<http://www.mymcgee.com/tools/yutility.html>.

One of the optional outputs of McGee's utility is a data file (in the "ych" format) for the Fluxus software. This may be the easiest way to prepare such a file.

Any author writing a genetic genealogy book for a general audience is faced with two difficult challenges. The first is that the science behind the subject itself is advancing rapidly as new DNA tests and ever-larger databases become available. The second challenge is that the growing popularity of the topic results in a steady demand for introductory information,

understandable to a non-scientist who is new to the field.

The author describes *Forensic Genealogy* as useful to "all levels of interest" and most genealogy hobbyists will find the first two sections of the book interesting and helpful. Furthermore, experienced genetic genealogists who are interested in exploring the use of cladograms may find the final section's case study useful. However, beginners interested in genetic genealogy may be better served by *Trace Your Roots With DNA* (Smolenyak and Turner) or *DNA and Family History* (Pomery).

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