

## NOTES

1. *Admissibility of biostatistical proof of paternity.* What special limitations, if any, should be imposed on genetic proof of paternity? The requirement of a display of prior and posterior probabilities of paternity was proposed in Ira M. Ellman & David Kaye, *Probabilities and Proof: Can HLA and Blood Group Testing Prove Paternity?*, 54 NYU L. Rev. 1131 (1979), and the *Plemel* case is discussed in D.H. Kaye, *Plemel as a Primer on Proving Paternity*, 24 Willamette L.J. 867 (1988). In *Commonwealth v. Beausoleil*, 490 N.E. 2d 788 (Mass. 1986), the Supreme Judicial Court, in what amounted to an advisory opinion, rejected the requirement of a display of prior and posterior probabilities as unduly complicated. Instead, that court issued four prophylactic rules for paternity probability evidence. These rules are criticized in D.H. Kaye, *The Probability of an Ultimate Issue: The Strange Cases of Paternity Testing*, 74 Iowa L. Rev. 75 (1989), and in 1 McCormick on Evidence § 211 (Kenneth Broun ed., 6th ed. 2006).

2. *The biostatistical methods.* The various probabilities bandied about in parentage cases can be confusing when first encountered. Accounts in legal journals and treatises, not to mention opinions, are sometimes garbled. For more precise expositions of the biostatistical analysis, see, e.g., Mikel Aickin & D.H. Kaye, *Some Mathematical and Legal Considerations in Using Serological Tests to Prove Paternity*, in *Inclusion Probabilities in Parentage Testing* 155 (Richard H. Walker ed., 1983); Donald Berry & Seymour Geisser, *Inference in Cases of Disputed Paternity*, in *Statistics and the Law* 353 (Morris DeGroot et al. eds., 1986).

An unusual feature of paternity litigation is that the proportion of true claims brought by plaintiffs can be estimated from the rate of inclusions in genetic tests. For example, if a laboratory finds that 70% of the men referred for testing last year were included by tests that would include only 1% of falsely accused men, then nearly all the included men were true fathers. As noted in *Plemel*, laboratories have found that the base rate, or prevalence, of true claims of paternity is of this magnitude. See M.R. Mickey et al., *Empirical Validation of the Essen-Möller Probability of Paternity*, 39 Am. J. Human Genetics 123 (1986). The *Plemel* court writes in note 9 that such prior experience may not be used in assessing the probability that the man at bar is a biological father. Why not? Should the factfinder be informed of the base rate for valid claims? See Daniel Shaviro, *Statistical-Probability Evidence and the Appearance of Justice*, 103 Harv. L. Rev. 530 (1989).

3. *The prevalence and variety of statutes.* *Plemel* describes some of the Uniform Laws on the admissibility of genetic marker identification in parentage litigation. The states have amended their statutes, moving from the “exclusionary” statutes exemplified in *Beausoleil* to “inclusionary” ones. D.H. Kaye & Ronald Kanwischer, *Admissibility of Genetic Testing in Paternity Litigation: A Survey of State Statutes*, 22 Family L.Q. 109 (1988).

Much of the impetus for legislation in this area comes from federal requirements for states to receive grants for child welfare programs. In particular, 42 U. S. C. § 666 specifies that “each State must have in effect “[p]rocedures which permit . . . [g]enetic testing . . . in certain contested cases.” The state laws must provide for “the admission into evidence, for purposes of establishing paternity, of the results of any genetic test that is . . . of a type generally acknowledged as reliable by accreditation bodies . . . and [is] performed by a laboratory approved by such an accreditation body . . . .” Moreover, there must be “a rebuttable or, at the option of the State, conclusive presumption of paternity upon genetic testing results indicating a threshold probability that the

alleged father is the father of the child.” Finally, the federal government requires that the states cut certain other corners, by “making the test results admissible as evidence of paternity without the need for foundation testimony or other proof of authenticity or accuracy, unless objection is made,” and by dispensing with “a trial by jury.”

How does a presumption of paternity differ from the presumptions for intoxication based on blood or breath alcohol measurements? Is the presumption necessary in the parentage context? Can a “conclusive presumption” be rebutted by evidence that the laboratory test results are not accurate? That the paternity index or the “probability of paternity” has been calculated incorrectly? If the presumption is rebuttable, what can the rebuttal evidence consist of, and how convincing must it be? What should the “threshold probability” be? Or, should the threshold be formulated in terms of the paternity index? Various statutes creating presumptions are analyzed and criticized in D.H. Kaye, *Presumptions, Probability and Paternity*, 30 *Jurimetrics J.* 323 (1990). The approach taken in the Uniform Parentage Act of 2000 is described — and questioned — in 4 *Modern Scientific Evidence* § 33:6 (David L. Faigman et al. eds., 4th ed. 2005-06).

4. *Advances in technology.* The *Plemel* court states that “[a]lthough there have been many recent advances in paternity testing, leading to very high probabilities of excluding falsely accused fathers, paternity testing alone cannot yet prove paternity.” 735 P.2d at 1217. In the decades since this opinion, even more dramatic advances have been made. See, e.g., 4 *Modern Scientific Evidence* ch. 33 (David L. Faigman et al. eds., 4th ed. 2005-06); D.H. Kaye, *DNA Paternity Probabilities*, 24 *Fam. L.Q.* 279 (1990). Instead of paternity indices of 178, experts now report indices in the millions. E.g., *Department of Human Serv. v. Moore*, 632 So.2d 929 (Miss. 1994) (reporting a paternity index of 22,473,773); *Commissioner of Social Serv. v. Hector S.*, 628 N.Y.S.2d 270 (App. Div. 1995) (tests of red cell antigens, enzymes and serum proteins, leukocyte antigens, and DNA gave a paternity index of 11,734,738). Have we reached the point where genetic testing alone can prove paternity? If not, what would it take?