

4754. ZACCHIA, PAOLO (PAULUS). **Questiones medico-legales.** Revised ed. Frankfurt am Main: Johannes Melchior Bencard, 1688. 3 vols.

First edition, Rome and Amsterdam, 1621-35. Zacchia, a Roman physician at the papal court (1584-1659), is regarded as the founder of the discipline of forensic medicine. In Book IV, quaestio V, he deals with the forensic signs of the violation of boys.

## XXIV. BIOLOGY

### A. GENERAL

It is tempting, but simplistic to attribute homosexual behavior simply to biological factors. Yet to exclude such factors altogether, stigmatizing this kind of study as "biologism," as is done by some environmentalists and egalitarians, would be to err in the opposite direction. It is true that some studies seeking to demonstrate biological foundations of homosexual behavior have been poorly designed and tendentious, but future work may be more convincing. See also "Social Sex Roles," XIV.L.

4755. BAKER, SUSAN W. "Biological Influences on Human Sex and Gender," *Signs*, 6 (1980), 80-96.  
Holds that the bulk of evidence from studies on human beings does not support the thesis that prenatal environment is responsible for sex object choice in adolescence.
4756. BARLOW, DAVID H. "Plasma Testosterone Levels in Male Homosexuality: A Failure to Replicate," *Archives of Sexual Behavior*, 3 (1974), 571-75.  
Findings fail to confirm the relation, posted by R. Kolodny's group and others, between degree of homosexuality and plasma testosterone level. See also: L. Birk et al., "Serum Testosterone Levels in Homosexual Men," *New England Journal of Medicine*, 289 (1973), 1236-38.
4757. BEACH, FRANK A. *Hormones and Behavior*. New York: Paul B. Hoeber, 1949. 368 pp  
Concludes that, in comparison with animals, hormonal effects are far less influential in man, where they are overridden by psychological and social factors. This difference accounts for the lack of success of etiological studies in human homosexuality that attribute it to biological/constitutional factors.
4758. BIRKE, LYNDIA I. A. "Is Homosexuality Hormonally Determined?" *JH*, 6:4 (1981), 35-49.  
Considers two types of research (1) measurement of hormone levels in adult populations; and (2) hypothesis of behavioral determination by prenatal hormones. Concludes that the underlying theories are generally naive; their popularity is to be explained by the their perceived potential in "controlling" homosexuality. See also her: "From Sin to Sickness: Hormonal Theories of Lesbianism," in Ruth Hubbard et al. (eds.), *Biological Woman--The Convenient Myth*. (Cambridge, MA: Schenkman, 1982), 71-90.
4759. DOERR, PETER, et al. "Plasma Testosterone,

Estradiol, and Semen Analysis in Male Homosexuals," **Archives of General Psychiatry**, 29 (1973), 829-33.

Contents that elevated plasma estradiol concentrations of the homosexual group are a biological feature of this group and may be associated with homosexual behavior. See also Doerr et al., "Further Studies on Sex Hormones in Male Homosexuals," *ibid.*, 33 (1976), 611-14.

4760. DÖRNER, GÜNTER, et al. "A Neuroendocrine Predisposition for Homosexuality in Men," **Archives of Sexual Behavior**, 4 (1975), 1-8.

Reports that, in male rats, androgen deficiency during a critical hypothalamic organizational period was found to give rise to a predominantly female-differentiated brain, homosexual behavior, and demonstration of a positive estrogen feedback effect. Despite methodological criticisms on various grounds, this East German researcher and his colleagues have presented their thesis in over a hundred articles and papers. See, e.g., Paul H. Van Dyck, "A Critique of Dörner's Analysis of Hormonal Data from Bisexual Males," **Journal of Sex Research**, 20 (1984), 412-14. See also: Anke Ehrhardt et al., "Sexual Orientation after Prenatal Exposure to Exogenous Estrogen," **Archives of Sexual Behavior**, 14 (1985), 57-77.

4761. FAUSTO-STERLING, ANNE. **Myths of Gender: Biological Theories about Women and Men**. New York: Basic Books, 1985. 258 pp.

A feminist scientist argues that there is no unbiased research in the socially charged area of sex differences, which (she holds) are much less significant than usually believed.

4762. FRIEDLÄNDER, BENEDICT. "Entwurf zu reizphysiologischen Auslese der erotischen Anziehung unter Zugrundelegung vorwiegend homosexuellen Materials," **JfsZ**, 7 (1905), 387-462.

This study expands the ideas of physiological attraction--based in part on what would now be termed pheromones--adumbrated in his better known book of 1904, **Renaissance des Eros Uranios**.

4763. FRIEDMAN, RICHARD C., et al. "Hormones and Sexual Orientation in Men," **American Journal of Psychiatry**, 134 (1977), 571-72.

Finds that the mean plasma androstenedione level for homosexuals was significantly greater than for heterosexuals. See also Friedman and Andrew G. Frantz, "Plasma Prolactin Levels in Male Homosexuals," **Hormones and Behavior**, 9 (1977), 19-22; and Friedman et al., "Psychological Development and Blood Levels of Sex Steroids in Male Identical Twins of Divergent Sexual Orientation," **Journal of Nervous and Mental Disease**, 163 (1976), 282-88.

4764. GARTRELL, NANETTE K. "Hormones and Homosexuality,"

in: William Paul et al. (eds.), **Homosexuality: Social, Psychological and Biological Issues.**

Beverly Hills, CA: Sage, 1982, pp. 169-82.

Examines research with respect to testosterone levels hypothesized as lower in homosexual men and higher in lesbian women, and with respect to purported hormonal excesses or deficiencies in the fetus in the uterus. Concludes that the evidence for hormonal theories of homosexuality is weak. See also Gartrell et al., "Plasma Testosterone in Homosexual and Heterosexual Women," **American Journal of Psychiatry**, 134 (1977), 1117-19.

4765. GLADUE, BRIAN A., et al. "Neuroendocrine Response to Estrogen and Sexual Orientation," **Science**, 225 (September 9, 1984), 1496-99.

Presents evidence for suggesting that homosexual men process hormones differently from heterosexual men.

4766. GOLDSCHMIDT, RICHARD. "Die biologischen Grundlagen der konträren Sexualität und des Hermaphroditismus beim Menschen," **Archiv für Rassen- und Gesellschafts-Biologie**, 12 (1916), 1-14.

On the basis of experiments in breeding intersexes in butterflies, the author argues that homosexuality is part of a continuum of normal variations within homo sapiens. On him see Leonie K. Piternick (ed.), **Richard Goldschmidt, Controversial Geneticist and Creative Biologist** (Basel and Boston: Birkhauser Verlag, 1980; 154 pp.; *Experientia Supplementum*, 35), which concludes that his work on sex determination and intersexuality remains controversial and in need of further verification.

4767. HODANN, MAX. "Neue Forschungen zur Kenntnis der hereditärphysiologischen Grundlagen sexueller Zwischenstufen," **JfsZ**, 15 (1915), 59-68.

Presents then-new research on the hereditary-physiological basis of sexual intermediate types.

4768. HOULT, THOMAS F. "Human Sexuality in Biological Perspective: Theoretical and Methodological Considerations," **JH**, 9:2-3 (1983-84), 137-55.

The results of a review of the evidence suggest that claims for the biological model are questionable inasmuch as the evidence for the model either extrapolates from animal studies (and thus is not as such applicable to human behavior) or is inconclusive, contradictory, and methodologically deficient. Hault prefers a social-learning model.

4769. JAMES, SHEELAH, et al. "Significance of Androgen Levels in the Aetiology and Treatment of Homosexuality," **Psychological Medicine**, 7 (1977), 427-29.

Finds that androgen levels have no etiological significance in treatment-seeking homosexuals and have no relevance as indicators of treatment outcome.

4770. KINSEY, ALFRED C. "Criteria for Hormonal Explanation of the Homosexual," **Journal of Clinical Endocrinology**, 1 (1941), 424-28.  
Weighing previous research, Kinsey seeks to set forth standards for judging future endocrinological studies. Contends that it is a mistake to regard homosexuals and heterosexuals as two distinct types, rather than as points on a continuum.
4771. KOLODNY, ROBERT C., et al. "Plasma Testosterone and Semen Analysis in Male Homosexuals," **New England Journal of Medicine**, 285 (1971), 1170-74.  
This much discussed study reports finding that testosterone measurements in predominantly or exclusively homosexual men were significantly lower than in heterosexual controls. Other studies failed to replicate the findings; cf. e.g. D. H. Barlow, above.
4772. KRELL, L., et al. "Beziehungen zwischen klinisch manifester Homosexualität und dem Oestrogenfeedback-Effekt," **Dermatologische Monatschrift**, 165 (1975), 567-72.  
Reports that under experimental conditions homosexual men have a positive feedback effect in response to LH serum, while heterosexual men do not.
4773. LANG, THEO. **The Difference Between a Man and a Woman**. New York: John Day, 1971. 413 pp.  
See pp. 19, 52-57, 107-08, 154, 155-61, 222, 329-30, 332, 340. A constitutional biologist treats the problems of homosexuality, transvestism, and transsexualism with insight and tolerance.
4774. MACCULLOCH, MALCOLM J. "Biological Aspects of Homosexuality," **Journal of Medical Ethics**, 6 (1980), 133-38.  
Contends that the behavior of primary male homosexuals has as its essential cause a female differentiated brain. See also MacCulloch and John L. Waddington, "Neuroendocrine Mechanisms and the Aetiology of Male and Female Homosexuality," **British Journal of Psychiatry**, 139 (1981), 341-45.
4775. MARGOLIESE, M. SYDNEY. "Homosexuality: A New Endocrine Correlate," **Hormones and Behavior**, 1 (1970), 151-55.  
A well-publicized report on testosterone breakdown, which further research failed to substantiate.
4776. MEYER-BAHLBURG, HEINO F. L. "Sex Hormones and Male Homosexuality in Comparative Perspective," **Archives of Sexual Behavior**, 6 (1977), 297-325.  
Well-informed review of literature and critique of results of the endocrinological/hormonal approach to the measurement and therapy of male homosexuality. See also his: "Sex Hormones and Female Homosexuality: A Critical Exam-

ination," *ibid.*, 8 (1979), 101-19.

4777. MONEY, JOHN. "Gender-Transposition Theory and Homosexual Genesis," **Journal of Sex and Marital Therapy**, 10 (1984), 75-82.

Discusses the implications of prenatal hormonal programming of the sexual brain, as well as postnatal social programming for gender transposition, in relation to the genesis of homosexuality.

4778. MONEY, JOHN. "Genetic and Chromosomal Aspects of Homosexuality," in: Judd Marmor (ed.), **Homosexual Behavior: A Modern Reappraisal**. New York: Basic Books, 1980, 59-72.

Reviews the history of "speculative genetics" about homosexuality; statistical genetics; cytogenetics; and matched-pair studies. With 45 references. See also Money and Jean Dalery, "Iatrogenic Homosexuality: Gender Identity in Seven 46,XX Chromosomal Females with Hyperadrenocortical Hermaphroditism Born with a Penis, Three Reared as Boys, Four Reared as Girls," **JH**, 1 (1976), 357-71.

4779. NEWMARK, STEPHEN R., et al. "Gonadotropin, Estradiol, and Testosterone Profiles in Homosexual Men," **American Journal of Psychiatry**, 136 (1979), 767-71.

Results suggest that there may be subtle differences in gonadotropin and estradiol secretion in homosexual subjects that can be detected only by repeated sampling.

4780. PERLOFF, WILLIAM H. "Hormones and Homosexuality," in: Judd Marmor (ed.), **Sexual Inversion: The Multiple Roots of Homosexuality**. New York: Basic Books, 1965, pp. 44-70.

Emphasizes the lack of definite evidence for hormonal factors in homosexual behavior.

4781. PILLARD, RICHARD C., et al. "Plasma Testosterone Levels in Homosexual Men," **Archives of Sexual Behavior**, 3 (1974), 453-58.

Testosterone levels were not related to relative masculinity or femininity or to any other psychological variables measured.

4782. RABOCH, JAN, and KAREL NEDOMA. "Sex Chromatin and Sexual Behavior: A Study of 36 Men with Female Nuclear Pattern and of 194 Homosexuals," **Psychosomatic Medicine**, 20 (1958), 55-59.

In the adult group of exclusive or nearly exclusive homosexuals, testes of subnormal size were found in only 9 of the total 194 cases. The finding of female sex chromatin in homosexual men is likely to be pure coincidence.

4783. RICHARDSON, DIANE. "Theoretical Perspectives on Homosexuality," in: John Hart and Diane Richardson (eds.), **The Theory and Practice of Homosexuality**. Boston: Routledge and Kegan Paul, 1981, pp. 5-37.

Clear presentation for the lay reader of the theoretical parameters which should govern hypothesis formation and research in this sphere.

4784. RICKETTS, WENDELL. "Biological Research on Homosexuality: Ansell's Cow or Occam's Razor?" *JH*, 10 (1984), 65-93.

Reviews research based on the assumption that homosexuality can be traced to heredity, prenatal brain differentiation, or effects of gonadotropins in adulthood, finding it inadequate. Useful bibliography (86 references).

4785. RUSE, MICHAEL. "Nature/Nurture: Reflections on Approaches to the Study of Homosexuality," *JH*, 10:3-4 (1984), 141-51.

Cautions against undue fear of biological approaches to the study of homosexuality, which should not hamper worthwhile research. Urges that both biological and environmental factors be considered in seeking to render a true picture of homosexuality.

4786. SEABORG, DAVID M. "Sexual Orientation, Behavioral Plasticity, and Evolution," *JH*, 10:3-4 (1984), 153-58.

Proposes that the species flexibility that allows human beings to become homosexual may result from the evolution of the capacity to learn, the complexity of the central nervous system, and behavioral plasticity in general.

4787. TOURNEY, GARFIELD. "Hormones and Homosexuality," in: Judd Marmor (ed.), **Homosexual Behavior: A Modern Reappraisal**. New York: Basic Books, 1980, pp. 41-58.

Reviews the literature, regarding the state of the question at the time of writing as largely inconclusive, but with some optimism for future progress. Contrast L. I. A. Birke; and W. Ricketts, above. See also: Tourney and Lon M. Hatfield, "Androgen Metabolism in Schizophrenics, Homosexuals, and Normal Controls," **Biological Psychiatry**, 6 (1973), 23-36; Tourney et al., "Hormonal Relationships in Homosexual Men," **American Journal of Psychiatry**, 132 (1975), 288-90.

4788. WEINBERG, THOMAS F. "Biology, Ideology, and the Reification of Developmental Stages in the Study of Homosexual Identities," *JH*, 10:3/4 (1984), 77-84.

Discerns several problems stemming from the use of biologically derived models: (1) stages, which are researchers' constructs rather than reflections of the subjects' perceptions, become reified; (2) moral assumptions embedded in biologically derived models become incorporated in sociopsychological theories of identity; and (3) the models tend to be constructed in a monistic, linear fashion, excluding the consideration of other approaches.

4789. WILSON, WILLIAM P., et al. "Arousal from Sleep of Male Homosexuals," **Biological Psychiatry**, 6 (1973), 81-84.

Homosexual males differed from normal males in being significantly more arousable in Stage 3 and 4 of the sleep cycle, as are normal females.

#### B. SOCIOBIOLOGY

Through the publications of Edwin O. Wilson and his colleagues at Harvard, sociobiology became a much-discussed topic in the 1970s. Most of the controversy revolves around human behavior, since it is generally conceded that the sociobiological approach has proved valuable in some animal studies. With regard to human homosexuality, sociobiology purports to solve the riddle of how this behavior pattern can accord with the evolutionary theory of sexual selection focusing on procreation by proposing models of "inclusive fitness" in which homosexual behavior is genetically functional.

4790. FUTUYMA, DOUGLAS J., and STEPHEN J. RISCH. "Sexual Orientation, Sociobiology, and Evolution," **JH**, 9:2-3 (1983-84), 157-68.

Concludes that there is no reliable evidence that homosexual and heterosexual orientations are caused by genetic differences. Evolutionary theory provides no guide to morality or ethical progress, nor for appropriate social attitudes toward homosexuality.

4791. GENGLE, DEAN, and NORMAN D. MURPHY. "Why We Are Gay: Revolutionary Extinction? An Evolutionary Model of the Origin of Sexualities," **Advocate**, no. 253 (November 1, 1978), 15-21.

Speculative theoretical model of the psychobiological components of gender, gender identity, and sexual orientation.

4792. KIRSCH, JOHN, and JAMES RODMAN. "The Natural History of Homosexuality," **Yale Scientific Magazine**, 51:3 (1977), 7-13.

Concise statement of the case for the sociobiological approach.

4793. MILLER, ALAN V. **The Genetic Imperative: Fact and Fantasy in Sociobiology: A Bibliography**. Toronto: Canadian Gay Archives, 1979. 107 pp. (CGA Publications, 2)

In this useful roster, presenting both pro and con publications, see esp. "Gays," pp. 82-83. For representative papers on general questions posed by the emergence of this controversial discipline in the 1970s, see Arthur L.