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TRANSSEXUALISM

A STUDY OF FORTY-THREE CASES

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The desire to dress in the clothes of the opposite sex is a phenomenon that has existed in every age and in every culture. The first description of it in the medical literature seems to have been given by the German, J. Friedreich in 1830, and some years later Esquirol gave a brief account of two other cases.

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Preface

The desire to dress in the clothes of the opposite sex is a phenomenon that has existed in every age and in every culture. The first description of it in the medical literature seems to have been given by the German, J. Friedreich in 1830, and some years later Esquirol gave a brief account of two other cases. In 1910 Hirschfeld coined the name transvestism for the phenomenon, and since then this has been the name most commonly used. As Hirschfeld pointed out, however, the name is only concerned with how the condition is manifested outwardly, not with its inner psychologic core. Many transvestites not only want to dress in the clothes of the opposite sex, they feel as if they belonged to the opposite sex, that they have been given the wrong body, especially the wrong external sex characteristics, and they want to be operated on so that their body looks as much as possible like that of the opposite sex. Cauldwell (1949) suggested the term "psychopathia transsexualis" for persons who feel this way. After this, Benjamin (1954) coined the word transsexualism, a term which has been used more and more in recent years.

Only recently have transvestism and transsexualism been given systematic study. But only a few authors have been able to collect series of any size (BUrger-Prinz & Weigel, 1940; Overzier, 1955; Randell, 1959; Taylor & McLachlan, 1962, 1963a, b, 1964; Benjamin, 1964a; 1964b; 1966a; Money & Pollitt, 1964; Roth & Ball, 1964; Ball, 1966; BfirgerPrinz, Albrecht & Giese, 1966). Different authors use different criteria for transvestism and transsexualism, and it is hard to draw any general conclusions from most of the cases reported hitherto.

Transvestism and transsexualism give rise to many problems: social, medical, ethical and legal. Yet not much experience has been collected, for instance, on the epiderniologic characteristics of these phenomena, on what causes them, how they progress, and how to treat them. Most of the writing on the subject consists of speculation and the decisions that physicians make in cases of transsexualism, some of vital importance, have been based on shaky theoretical reasoning. Lately, Benjamin (1954, 1964a, 1966a), Roth & Ball (1964) and Green, Stoller & MacAndrew (1966) have pointed out the need of systematic examinations of transvestites and transsexuals, people who probably have much greater psychologic and social problems than do those with anatomic intersex states.

The aim of the present study was to give a multidimensional picture of transsexualism. I chose to study transsexualism as it seems to be easier to delimit than transvestism, cross-dressing being a component of several abnormal conditions.

For valuable advice and the many hours they devoted to helping me in this study I wish to thank Professor Hans Forssman, Associate Professor Hans Olof Akesson and other colleagues at St. Jdrgen's Hospital, and also other members of the staff there, especially Miss Inga Thuwe and Mr. Ernest HArd. I am also indebted to Professors Bengt LindegArd and Rolf Luft, Associate Professor Ingemar Peters6n and Dr. Oskar Steinwall, and many other colleagues who have assisted me in one way or another. Lastly, I am grateful for valuable help in matters of psychology to Messrs. Sven Marke, Bertil Bj6rkman, Eric Osterberg and Ake Ahlberg, and for help with the literature to Mr. Folke Strom, the head of the Medical Library in G6teborg, and other members of his staff.

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Review of Literature on Transvestism/Transsexualism

A review of the literature on transsexualism must also take transvestism into account, for many reports, especially the early ones, do not distinguish clearly between transsexualism and transvestism.

As mentioned, Hirschfeld (1910) coined the word transvestism, and the name has been used ever since for this phenomenon. But the name for the transsexual phenomenon has undergone many changes. First, Westphal (1869) introduced the term "*Die kontrAre Sexualempfindung*". Later Krafft-Ebing (1892) called the phenomenon "*Metamorphosis sexualis paranoica*", but with this he apparently extended the concept to include a psychotic component. Binder (1933) talked about "*Verlangen nach Geschlechtsumwandlung*". Havelock Ellis (1913) used the term "*Sexo-esthetic inversion*" but later changed to "*Eonism*" (1920), a name based on the renowned Chevalier d'Eon. Hamburger, Stürup & Dahl-Iversen (1953) suggested "*Genuine Transvestism*" as well as "*Eonism*" or "*Psychic hermaphroditism*". Money (1961c) used the expression "*Contra-sexism*."

Dorey (1956) introduced the term "*Inversion psycho-sexuelle avec: travestissement*", and Klotz, Borel & Colla (1955) talked about "*Travestissement heterosexuel habituel avec inversion psychique.*"

As an extension of the concept of transvestism, Cauldwell (1949) introduced the term "*Psychopathia transsexualis*." After this, Benjamin (1954) and Gutheil (1954) began using the term "*Transsexualism*" and since then most authors have followed suit.

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- *Transvestism and transsexualism vs. fetishism and homosexuality*
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Transvestism vs. Transsexualism

Most modern authors seem to be agreed on the definition of transvestism. They agree that the chief characteristic is the desire and need to dress in the clothes of the opposite sex (e.g. Kinsey, Pomeroy & Martin, 1953; Anchersen, 1956; Lukianowicz, 1959a; Burchard, 1961; Schultz, 1961). Hamburger et al. (1953), as well as Stürup (1956) and Roth & Ball (1964), pointed out, however, that the term transvestism has been used for several conditions. It should be reserved for a primary desire or need of this kind, not a secondary characteristic of, for example, homosexuality or fetishism, when it should be called symptomatic transvestism (Roth & Ball,

1964). In Hampson's (1964), opinion, transvestism is only present when the subject dons the clothes of the other sex to attain "psychosexual comfort and satisfaction."

Nor is there much difference in opinion on the criteria for transsexualism (e.g. Hamburger et al., 1953; Benjamin, 1954, 1964a, 1966a; Delay Deniker, Volmat & Alby, 1956; Vague, 1956; Alby, 1959; Goldrach, 1963; Roth & Ball, 1964; Pauly, 1965). Transsexuals not only want to dress like the opposite sex, they abhor the signs of their anatomic sex, especially their genitals and they want to have their bodies altered to resemble that of the other sex. They are often convinced that nature has made a mistake in their case, that they really belong to the other sex, that their bodies have developed along the wrong lines. This abhorrence for their own bodies is a consistent feature in transsexualism. Stdrup (1956) described this feeling in men as a desire to have their bodies and social roles agree with their mental conception of themselves as a woman.

One of the most important characteristics of both transvestism and transsexualism, according to Benjamin (1964a), Hamburger et al. (1953) and Roth & Ball (1964) is that they have nothing to do with sexual satisfaction. Benjamin (1964a) and Roth & Ball (1964) said that transvestism and transsexualism probably overlap. Hampson (1964) also said that the two conditions were related and, in his opinion, it was wrong to consider them basically different phenomena.

Transvestism and transsexualism vs. fetishism and homosexuality

Transvestism is sometimes confused with homosexuality, as pointed out by Kinsey et al. (1953) and Armstrong (1958). Some physicians tell their patients that their transvestism is a sign of homosexuality, and that they must accept having homosexual relations if they are to resolve their psychologic conflicts (Kinsey et al., 1953). Dukor (195 1) said that transvestism was the end product of passive male, or active female, homosexuality, and Anchersen (1956) voiced much the same opinion when he said that, from the biologic point of view, bisexuality, certain forms of homosexuality and transvestism were different stages along a particular line of sexual deviation. Goldrach (1963) believed that transvestism was a sign of homosexuality.

Grant (1960) said that transvestism, homosexuality and fetishism were not distinctly separate phenornena. Flaberlandt (1950) pointed out that different forms of sexual deviation sometimes occur together, and that sometimes one replaces the other.

Other authors believe that transvestism is clearly distinguishable from homosexuality. One of the most prominent advocates of this opinion, Armstrong (1958), distinguished between the two conditions in biologic men as follows: "(1) The crucial characteristic of the homosexual is the desire for a physical sex relation with a person of his own sex. The eonist is repelled by the physical aspect of a homosexual relationship. (2) Homosexuals do not want to change their sex and identity. This is the fundamental anomaly in eonism. (3) A conspicuously feminine appearance and a lifelong preference for feminine games and activities are far more common in eonism than in homosexuality. (4) ... preference for the feminine role in eonism is evident from early childhood. (5) The phantasies of pregnancy and the passionate longing for a maternal role together with the desire for castration in an attempt to achieve anatomical resemblance to a woman are characteristic of eonism."

Other recent authors have made about the same distinction between transvestism and homosexuality (Roth & Ball, 1964), and many have pointed out that it was necessary to distinguish between the two (Karpman, 1947; Battig, 1952; Klotz et aL, 1955; Dorey, 1956; Salfield, 1958; Ostenfeld 1959; Mayer-Gross, Slater & Roth, 1960). These authors do not always agree on the definition of homosexuality, however, and some do not say what they mean exactly by homosexuality. Only after a semantic analysis of the type made by Hooker (1965), for example, can one work with operational definitions and arrive at any generally applicable conclusions. The distinction from fetishism seems to cause less difficulty, though Delay, Deniker, Lamperi6re & Benoit (1954) said that transvestism was a special form of fetishism, in which the fetishism was extended to involve dress as a whole.

Many say that fetishism differs from transvestism/transsexualism in that the fetish is necessary for attaining sexual satisfaction, whereas wearing clothes of the opposite sex has nothing to do with exciting or satisfying sexual desire (Hamburger et al., 1953; Ostenfeld, 1959; Hoenig & Torr, 1964). Pennington (1960) noted that some transvestites get sexual satisfaction by masturbating in front of a mirror (mirror complex).

Benjamin (1964a) concluded from a study of 200 cases that in the early stages of transvestism, changing to the clothes of the opposite sex might be associated with pleasurable sexual feelings, but that the feelings fade with the passage of time.To sum up, it should be possible to make a clear distinction between homosexuality and fetishism, on the one hand, and if not transvestism, at least transsexualism, on the other.

Deviant sexual behavior and gender role

Attempts to distinguish between different types of deviant sexual behavior have led to the term "gender role" (Hampson & Hampson, 1961; Hampson, 1963, 1964). According to Hampson (1964) gender role means "all those aspects of a person's behaviour and attitudes which serve to disclose the person as having the status of boy or man, girl or woman. It includes, but is not restricted to sexuality in the sense of eroticism." Gender role, or "psychologic sex" as the Hampsons also call it, is one of the several components of sex. According to Money, Hampson & Hampson, (1957) and Hampson & Hampson (1961) these components are: (1) chromosomal sex, (2) gonadal sex, (3) internal anatomic sex, (4) external anatomic sex, (5) hormonal sex, (6) sex of assignment and rearing, and (7) gender role, or psychosexual identification.

Armstrong (1964) stated that an intersex state was present whenever chromosomal sex, gonadal sex, apparent sex (external genitals and body build) did not agree in full with psychologic sex, and thus widened the concept of intersex to include deviations in psychosexual identification. When one considers psychologic sex to be a variable of sex, one does not need nonspecific, moralizing terms like perversion for classifying deviant sexual behavior: when a subject behaves like someone of the opposite sex and feels like someone of the opposite sex, it is a case of inversion in gender role. Thus Hampson (1964) classified deviant sexual behavior according to whether or not it was associated with gender role inversion, -fetishism, exhibitionism and impotence being associated with a normal gender role, and transvestism being a form of gender role inversion.

Stoller (1964a, b, c, 1965) formulated the concept of "core gender identity" for the feeling of "I am male" or "I am female" as distinguished from "gender role" for a masculine or feminine way of behaving. "Core gender identity" seems to be the better one of these terms to use when describing the transsexuals' feeling of the sex to which they belong.

Types of transvestism

It is important to make clear from the outset that transvestism may be a characteristic of several different conditions (Stilrup, 1956; Roth & Ball, 1964). Both Stfirup (1956) and Armstrong (1958) pointed out that cross-dressing was common among homosexuals, and StOrup (1956) and Fossel & Teirich (1951) pointed out that criminals sometimes used it to conceal their identity. The transvestism in these cases is symptomatic, and should be distinguished from real transvestism in which there are no such secondary motives for the cross-dressing.

Some authors, the early ones in particular, have classified transvestism. according to the object or strength of the sexual drive. Thus Hirschfeld (1938) divided transvestites into heterosexual, homosexual, bisexual, automonosexual, and asexual transvestites, Binder (1933) into heterosexual, asexual, bisexual and homosexual transvestites, and Battig (1952) into heterosexual, homosexual, bisexual and autosexual transvestites; Dukor (1951) used a slight modification of Bdttig's classification. Naecke (Bing & Sch6nberg, 1922) divided transvestites according to how often they cross-dressed, into temporary, intermittent and permanent transvestites. Hirschfeld (1938) divided transvestites on the same basis into partial and complete, and Kinsey et al. (1953) did the same.

Pettow (1912) used a more descriptive method of classification, dividing the subjects into: men who dressed like women, women who dressed like men, and adults who dressed like children.

Roth & Ball (1964) divided transvestism into three varieties: (1) symptomatic, (2) simple, in which the subjects confine themselves to cross-dressing and do not want to be operated on, and (3) transsexualism. Benjamin (1954) distinguished between three types of genuine transvestism: (1) chiefly psychogenic, (2) intermediate, and

(3) psychosomatic, the latter characterized by an intense desire to change anatomic sex. Later (1966a) he constructed a "sex orientation scale" covering six types of "sex and gender role disorientation and indecision" ranging from pseudotransvestites to transsexuals. Stilrup (1956) classified transvestites into: (1) antisocial subjects wearing the clothes of the opposite sex to conceal their identity, (2) transvestites with a tendency to fetishism, or vice versa, (3) homosexuals with secondary reasons for cross-dressing, (4) asthenic adolescent transvestites, who sometimes recover completely when they mature, and (5) genuine transvestites or conists. Whether or not transvestism is a nosologic entity is a subject of debate. St6rup (1956) says that it is not, and regards transvestism only as a symptom. Transsexualism seems to be easier to delimit, and Ostenfeld (1959), Burchard. (1961), and Barker (1966) stated that it was probably an independent syndrome.

Transvestism and psychosis

Lukianowicz (1959b) reported a case of transvestism combined with psychosis, and collected 15 other cases from the literature. Later (1962, 1965) he described 3 more cases, and Reimer (1965) described 2 cases. Lukianowicz suggested three causes for a combination of the two conditions: (1) An acute psychosis might cause latent transvestism to flare up, (2) the combination might be due to pure coincidence, and (3) transvestism might develop during a chronic psychosis without there being any clear causal connection between the two. Cases of the first type have been described by Liebman (1944), Lukianowicz (1962) and Reimer (1965). An example of the second type has been described by Fortineau, Vercier, Durand and Vidart (1939), and the same authors described a case of the third type.

Only a few cases of this combination are so clearly described that it is possible to classify the psychosis; examples are those of Lukianowicz (1959b, 1962, 1965) and Reimer (1965). It seems however, that both schizophrenic and schizophreniform, and manic-depressive psychoses and confusional states are represented among the cases.

Pauly (1965) found, on analyzing 100 transsexuals from the literature that 19 per cent were overtly psychotic "or schizophrenic." Gittleson & Levine (1966) noted that genital hallucinosis and a delusion of sexual transformation were significantly more common among schizophrenic than non-schizophrenic but otherwise mentally diseased subjects. Baastrup (1966) considered that the transsexual's feeling of belonging to the other sex had the character of a delusion and that they could therefore be classified as paranoiacs.

Strength of sexual drive and sex orientation

Many have noted that transvestites often have a weak sexual drive (e.g. Delay et al., 1956; Birker & Klages, 1961; Roth & Ball, 1964; Pauly, 1965). Gutheil (1954) pointed out that transvestites often did not begin having sexual relations until late, and Burchard (1961) noted that advanced cases were often characterized by "Anorgasmie" -even absence of masturbation.

As to the sex object choice, Hirschfeld (1938) stated that 35 per cent of his patients were heterosexual, 35 per cent homosexual, 15 bisexual, and the remaining 15 per cent chiefly automonosexual. Pauly (1965) found in a retrospective study that 39 per cent of 100 transsexual men had overt sexual relations with other men. Roth & Ball (1964) found that 52.9 per cent of 17 transsexual men were heterosexually active, and 11.8 per cent homosexually active. These authors pointed out, like Randell (1959), that nearly all transsexual women were homosexually inclined. Hamburger (1953) found from letters he received from 75 male and 77 female transvestites after wide publication of a case of transvestism, that 39 per cent of the men were heterosexual, 40 per cent homosexual (19 per cent having only homosexual desires, and 21 per cent homosexual attachments and relations), and 21 per cent hisexual, autosexual or asexual; and that all the women were homosexual, 18 per cent having homosexual desires, and 82 per cent homosexual attachments and relations.

Randell (1959), reporting on an apparently mixed group of transvestites and transsexuals, noted that homosexuality was more common among the transsexuals, and that it was more common in the women than in the men. Others have noted the same (e.g., Prince, 1957; Benjamin, 1964a and b). An interesting observation is that transvestites who have homosexual relations, transsexuals in particular, do not regard these relations as homosexual in the conventional meaning. Because these persons identify themselves so strongly with the opposite sex, they regard sexual relations with persons of their own anatomic sex as heterosexual, not

homosexual as others do. Nor do they want partners with homosexual leanings; they want their partners to be heterosexually oriented-in fact, some are very critical of homosexuality (e.g. Kissel, Hartemann & Laxenaire, 1961; Sendrail & Gleizes, 1961; Benjamin, 1964a, b; Pauly, 1965).

As mentioned, the definition of homosexuality presents considerable semantic problems. Randell (1959) classified homosexual attitudes according to Kinsey's scale for male sexual behavior (Kinsey et al., 1948), and it is clear what he means by homosexuality. It is harder to understand what others mean, and it is well to remember this when studying their figures. As Hooker (1965) summed up: "there is no apparent correspondence between a conscious sense of gender identity and a preferred or predominant role in sexual activity".

To sum up, it would appear that the tendency to homosexual interests and relations increases with the intensity of the transsexual phenomenon and that the females are more often homosexual than males. Otherwise, many males are heterosexually inclined, and not seldom marry (e.g., Randell, 1959). Bfirger-Prinz and Weigel (1940) pointed out that the men vary between passive and active sexuality, without showing any particular deviation from the normal pattern.

Stages in development of transvestism/transsexualism

The literature contains exhaustive descriptions of the mental characteristics associated with TV/TS (e.g., Ellis, 1928; Hamburger et al., 1953; Benjamin, 1954, 1964a, b, c, 1966a; Roth & Ball, 1964).

Most authors seem to agree that transvestism usually makes its appearance early in life. The first signs often appear as early as the age of five, ("Thompson", 1951; Nathan, 1965). Taylor & McLachlan (1962) said that most of their 10 cases began before the age of 12. To begin with, the subjects show a strong tendency to adopt the attitudes characteristic of the opposite sex and to behave in the manner considered appropriate for the other sex. The cross-dressing usually starts later (Robbe & Girard, 1959; Roth & Ball, 1964), around the age of 5 to 8 (Roth & Ball, 1964).

Only rare cases of a later debut-during adolescence or later-are published (e.g., Fessler, 1933; F6rster, 1957). The feeling of belonging to the other sex usually becomes more intense around the time of adolescence, and from then on the deviation seems to split in two. Either the subjects remain content to dress in the clothes of the opposite sex, consistently or sporadically, and are not particularly troubled by the external signs of sex on their bodies; these cases are not especially dramatic, and apart from the dressing anomaly, the subjects do not behave peculiarly (Lukianowicz, 1959a); they are often able to adjust and canalize their transvestism so as not to come into conflict with the norms of society. The other subjects, the transsexuals, get worse after adolescence. They grow more and more repelled by their external sex characteristics. They become more and more convinced that nature has blundered and that they have the soul of one sex and the body of the other (e.g., Alby, 1959; Hofer, 1961; Benjamin, 1964a). They persist more and more in their demands for medical measures to "change" their sex, whether it be hormones or plastic surgery, or both-demands that are seldom prompted by sexual motives (Brdutigam, 1958). Some do what they can to change their appearance themselves: the men pluck their eyebrows and take away their facial hair, they shave their arms and legs, and they trim their pubic hair to make it look feminine. Others try to make their bodies look like a woman's by injecting paraffin into their breasts and by other means (Bobon, Gomez, Gernay, Goffloul & Liegeois, 1965).

In occasional cases the anomaly comes and goes, the desire to change clothes or to be identified with the opposite sex waxing and waning (Pennington, 1960; Bdrger-Prinz et al., 1966). But in most cases the desire to pass over into the opposite sex grows steadily worse and worse, and the victims often grow more and more suspicious of their fellow-men whom they feel make no effort to understand or help them (Delay et al., 1954). The end result is often a conviction that one is being persecuted. Many transsexuals do not ask for help until they get into trouble (Gutheil, 1954) or until they break down under the pressure, material or mental, to which they are subjected. Another specific characteristic: they want one kind of treatment only-"a change of sex"; they never want to be "cured" of their "aberration" (e.g., Grotjahn, 1948; Birker & Klages, 1961; Nedoma & Mellan, 1966).

As time goes on, the transsexualism becomes associated with other mental peculiarities. Sometimes the subjects get the feeling that their bodies actually have the characteristics of the opposite sex (Allen, 1962) their genitals feel changed; the men begin to feel that their breasts are swelling, their skin is growing more like that of

a woman and their hair is becoming distributed in another manner. Some men begin to think they have ovaries (Alby, 1959) or other female characteristics, and some are convinced that they menstruate (Overzier, 1955; Allen, 1962; Bdrger-Prinz et al., 1966), or regard their ejaculations as leukorrhea (Alby, 1959).

Some men have phantasies of being pregnant and some dress to look as if they were pregnant (Hirschfeld, 1938). Persons who feel that their anatomy is changing or who use drastic measures to change their appearance to that of the other sex are not seldom on the brink of disintegration in personality, and attempts to make transsexuals change their ideas of belonging to the opposite sex, by psychotherapy or other measures, sometimes result in a real psychosis (Don, 1963; Pauly, 1965).

Typical of transsexualism are the exaggerated idea of belonging to the other sex, the desire to become a perfect specimen of the other sex, repulsion at the sight of one's own genitals, and the feeling that others are against one (Delay et al., 1956). To these traits Worden & Marsh (1955) added: a memory disorder-the subjects being only able to remember events bearing out that they identified themselves with the opposite sex from the very beginning-and the wrong feeling their genitals give, which makes having them removed like being rid of a cancer. Others have drawn attention to the selective form of recall (Plichet, 1955; Robbe & Girard, 1959).

Sometimes the desire to change sex reaches the proportions of an obsession (Pettow, 1912; Alby, 1959; Randell, 1959; Israel & Geissmann, 1960). When physicians and surgeons refuse to help these patients to get the change they want, their persecution complex grows even more intense, and many then mutilate themselves to get the appearance they want, or become depressed and suicidal.

Attempts at autocastration or to remove one's penis have been reported in several different kinds of mental disorder, though rarely, and they are not specific of any particular disorder (Solms, 1952; Blacker & Wong, 1963). There is a large risk of this in transsexualism, however (Delay et al., 1956; Fogh-Andersen, 1956). Grotjahn (1948) described a transsexual who tried to castrate himself three times, and once succeeded in enucleating a testicle, and several other cases of autocastration and amputation of the penis are reported (Wyrsch, 1944; Tolentino, 1957; Benjamin 1966a). Pauly (1965) analyzing 100 male transsexuals from the literature, found that 18 of them had tried or succeeded in amputating offending parts of their body.

Depressive reactions and attempts at suicide are other serious complications sometimes occurring in transsexualism (e.g., Hirschfeld, 1938; Delay et al., 1956; Fogh-Andersen, 1956; Randell, 1959; Bfirger-Prinz et al., 1966). Thirty-five per cent of Pauly's cases from the literature had suicidal thoughts, and 17 per cent had attempted suicide.

Personality

Most authors proceed extremely cautiously when they enter into a discussion on the basic personality of these subjects. Roth & Ball (1964) found that obsessional and dysthymic features occurred significantly more often in transsexual men than in a matched control group of homosexuals. They noted also that their patients were shy and reserved, and said that the majority of them were "sensitive, conscientious, determined and foresightful." Havelock Ellis (1928) also pointed out the sensitive and refined nature of the subjects, and the obsessional tendency has often been noted (Pettow, 1912; Masson, 1939; Aubert, 1947; Alby, 1959; Randell, 1959; Israel & Geissmann, 1960). Gutheil (1954) maintained that the personality must contain elements of sado-masochism, narcissism, scotophilia, exhibitionism, and fetishism in order for transvestism to develop, and Delay et al. (1954) expressed the same opinion.

Frequency

Reliable data are lacking on the prevalence or incidence of transvestism transsexualism. For one reason, probably only the subjects at the extreme end of this scale-the ones under the greatest strain-consult a physician and get into the statistics. There will always be a large number who can adjust themselves- to their surroundings, and are never uncovered. When an unusually large number of cases turn up within a short period, it is often because of the publicity given a case in which a person has had his or her sex "changed" by a surgeon.

Because of this, it is only possible to guess at the frequency of the anomaly, and widely divergent opinions on tile rate have been expressed, from the opinion that it is the next most common sexual deviation after homosexuality (Bing & Sclibriberg, 1922; Armstrong, 1958), that it is a "quite common perversion" (Wilson, 1948), that it is an uncommon anomaly though perhaps more frequent than commonly supposed (Hamburger et al., 1953), down to the opinion that it is rare (Birker & Klages, 1961). Turtle (1963) reckoned that it occurred in between 3,000 and 15,000 of a population of about 50 million, which corresponds to a prevalence between I per 17,000 and I per 3,300.

Anchersen (1965) found 3 transsexual men among 2,000 males admitted during three years to Ullevdl's Hospital in Norway, compared with 28 homosexuals, 12 bisexuals, and I exhibitionist. In an earlier article (1956) Anchersen said he knew of 8 transvestites among Norways's about 3,300,000 inhabitants. Hamburger et al. (1953) said that they knew of 5 transvestites (probably eonists) in a population ' of about 4 million. Bowman & Engle (1957) reported that "fewer than a dozen cases" were admitted during 15 years to the Langley Porter Clinic but did not say how many other patients were admitted during this period.

Benjamin (1964c) said that there were probably several thousand transsexuals in the Western world, and described 125 cases he had collected during the course of 13 years. Pauly (1966) estimated that I out of every 100,000 men and I out of every 400,000 females was a transsexual.

Sex ratio

The early literature dealt mainly with transvestism/transsexualism in males. The psych oanalytical explanation for transvestism -a symbolic form of denial of castration-fear through creation of a phallic woman -excludes the possibility of the anomaly in women (Lukianowicz, 1959a). It is now realized, however, that the anomaly occurs in both sexes.

Kinsey et al. (1953) said that the male-female sex ratio was 100:2-6. Twenty-one of Randell's (1959) 30 transsexuals were men and 9 women, and 37 of his combined group of transvestites and transsexuals were men and 13 women, giving M/F ratios between about 2.3:1 and 2.8:1.

After a widely publicized case in Denmark, Hamburger (1953) got letters from 465 persons from all over the world asking him to help them change their sex; 357 of them were men and 108 women. Hamburger classified only 115 of the 357 men as transvestites, and only 62 of these as what he called genuine transvestites. He was cautious in his deductions, saying only that the desire to change sex could be found among both men and women, but much more often among men.

The figures for the largest series of transsexuals published are: 152 men vs. 20 women, or a M/F ratio of about 8:1 (Benjamin, 1966a). The greater proportion of men has been explained in different ways. Lukianowicz (1959a) pointed out that, in the Western world, men dressing as women are apt to get arrested, but that women dressing as men are tolerated more, both by law and society. Furthermore, it is much easier for women to get work which allows them to dress in masculine clothing -for instance, on buses or in machine-repair shops -than vice versa. This makes it easier for female transsexuals to adjust themselves to their anomaly than it is for men, who in the end are often forced to seek medical help. The result is that physicians come into contact with many more male than female cases. Kinsey et al. (1953) concluded that the sex difference might be due to men being more easily conditioned to psychologic stimuli-"There are few phenomena which more strikingly illustrate the force of psychological conditioning."

One of the most intriguing problems in sex research is why men are more apt to have sexual anomalies than women, no matter what the culture (Roth & Ball, 1964).

Cultural differences in attitude to sex anomalies

As mentioned, the Western world looks more kindly on a woman who dresses slightly mannishly than it does on a man who dresses like a woman. Other cultures vary greatly in their attitude to cross-dressing. In some, among the Samoans, for example, transvestism is unknown (Lukianowicz, 1959a). In others it is common, and even encouraged (Mohave Indians and Plain Indians). Some tribes not only accept transvestism, but transvestites

rank high in the social scale, and play an important part, for example, in religious rites. Margaret Mead (e.g., 1961) and others have given lengthy descriptions of the attitudes of different cultures to anomalies of this kind.

Ford and Beach (1952) described the attitudes of other cultures. Examining 79 primitive peoples, they found that 49 regarded homosexuality as normal and quite acceptable socially. The commonest form of institutionalized homosexuality is that of the "berdache" or transvestite. This is most often a man "who dresses like a woman, performs women's tasks and adopts some aspects of the feminine role in sexual behaviour with male partners."

Psychoanalytic explanations

Most of the psychoanalytic theories on transvestism/transsexualism are based on the teachings of Freud (1904, 1927, 1931, 1933), and trace it mainly to efforts to counteract castration anxiety. Some authors, especially Fenichel (1930, 1945, 1949), have extended this theory; Fenichel contended that the male transvesite is a combination of a homosexual, who identifies himself with his mother, and a fetishist who will not relinquish the belief that women have a penis: he identifies himself with the phallic woman, and believes in her existence. Similar theories have been propounded by, among others, Shanket and Carr (1956) and Thomd (1957) and modifications on the same theme have been published by others (Hora, 1953; Friend, Schiddel, Klein & Dunaeff, 1954; Grant, 1960).

Segal (1965) maintained that, in addition to a castration complex, the anomaly stemmed from a separation complex-the fear of being separated from one's mother or father figure. Schw6bel (1960) believed that the undifferentiated and undeveloped components characterizing the personality of these patients were important factors. Tolentino (1957) said that a faulty ego-feeling helped to cause transvestism, and that the conception transsexual men had of their bodies made them want to have their physical appearance changed; that as a rule this mechanism remained unconscious, but that it sometimes broke through into the conscious and made them want to castrate themselves.

As Roth & Ball (1964) pointed out, it is hard to understand how transsexualism could be derived from castration anxiety; these people are not afraid of castration, they seek it. Greenberg, Rosenwald & Nielson (1960) believed that the desire for castratibn was a "defence against homicide directed especially toward the mother figure or mother surrogates."

Because there are so many different schools of psychoanalysis, and because psychoanalytic explanations for transvestism/transsexualism. have so far been based on only a few cases, it is hard to judge how plausible they are. Furthermore psychoanalysts generally do not differ between transvestism. and transsexualism, and many do not distinguish them clearly from fetishism and other sexual deviations.

Other psychologic explanations

Many stress the importance of an unhappy childhood, preventing normal psychosexual development. Psychologic conditioning and faulty identification are terms often brought up in this connection (LukianoWIC7, 1959a). Some of the main explanations based on this reasoning are tile following:

Parental rejection. The anomaly is due to the parents having wanted a child of the opposite sex instead; rejected by its parents, the child becomes unsure of itself, and becomes prematurely occupied with the idea of masculinity-femininity (e.g., Barahal, 1953; Gutheil, 1954; Alby, 1959), and may regard its genitals as the reason for its failure (Alby, 1959).

The child dressed in the clothes of the opposite sex. According to Lukianowicz (1959a), practically every male transvestite has been dressed in girls' clothes at least off and on till the age of 3 or 4, and this affects the boy's conception of, and identification with, his own sex.

Close visual contact ivith persons of opposite sex. Some adults go about naked a great deal in their hornes, often in front of young relatives for exhibitionistic reasons. This is a common cause of faulty sex identification, according to some authors (Karpman, 1947; Friend et al., 1953; Lewis, 1963), and according to others it is often the explanation for other kinds of sex deviation as well (Johnson & Robinson, 1957).

Reversal in parental role. Several blame a reversal in parental role (e.g., Deutsch, 1954). According to this theory the male transvestite has a domineering, aggressive, over-protective mother and an inadequate father figure, either because of a weak, colorless father, or because of the family lacking a father. Tiller (1958) said that the lack of a father should cause a compensatory, over-masculine attitude, and so militate against difficulty in identification and a feeling of inadequate masculinity.

Other authors blarning a disorder in sexual identification - either an enhanced identification with the parent of the opposite sex, or inadequate identification with the parent of the same sex - are Taylor & McLachlan (1963a, 1964) and Prince (1957). Ball (1966) pointed out that the parents often had an abnormal personality.

Imprinting. Money and Hampson & Hampson believed that the sexual anomaly could be traced to imprinting (e.g., Money et al., 1957; Hampson & Hampson, 1961; Money, 1961a, b, 1963). Studying hermaphroditic children, they concluded that the establishment of gender role was analogous to the imprinting phenomenon seen in animals. They noted in a study of about 100 hermaphrodites that the gender role and sexual identification nearly always depended on the way the child was reared, though it might have been assigned a sex contrary to its chromosomal, gonadal or hormonal sex. If the child was assigned another sex after about the age of 18 months, it might lead to serious mental conflicts, according to these authors. Hampson later (1965) confirmed these observations with a larger series.

Studying 11 pre-adolescent boys with an effeminate personality, Green & Money (1961) concluded that no aspect of gender role behavior was established at birth-that it was established after birth by different external stimuli, that just as a child is born with the ability to learn a language, but the actual language it speaks depends on environment, its psychosexual differentiation also depends on external factors. Money (1965), like Hampson & Hampson (1961) and Hampson (1965), contended that children were psychosexually neutral at birth. Ellis (1945) and Vblkel (1963) also pointed out the importance of environmental factors.

Some authors do not agree on the importance of imprinting and disagree particularly with the idea that a surgical "change of sex" would be harmful after the age of 18 months. Dewhurst & Gordon (1963) reported 20 cases in which an operation after this age had surprisingly successful effects on the patients. Others have reported the same (Norris & Keettel, 1962; Berg, Nixon & MacMahon, 1963; Brown & Fryer, 1964; Armstrong 1966).

Change in, or inappropriate body image. That an inappropriate body image at least contributes to the development of transvestism /transsexualism has been suggested by several, including Bowman & Engel (1957). Delay et al. (1956) also pointed out that a change in body image, for instance, through endocrine disorder, might tend to change psychosexual behavior, partly through the subjects' own reaction to the change in their anatomy and partly through the reactions of others.Those reasoning on psychoanalytic lines also consider that an inappropriate body image might help to cause the anomaly (e.g., Tolentino, 1957 and Lewis, 1963). It is hard to determine the part played by body image on the anomaly. Schonfeld (1962), studying 284 men with gynecomastia when they were adolescent was unable to establish that this had any effect on their sexual life but he pointed out that gynecomastia gave the adolescent boy more trouble than it did the adult man. On the other hand, there is no doubt that a normally developing body favors normal psychosexual maturation and that deviations from the normal in anatomy, especially during adolescence, increase the risk of mental trauma, more so in boys than in girls (Money, 1961 a; Hampson, 1965).

Organic explanations

Genetic factors. Goldschmidt's (1931) observation of intersex states in the gipsy moth (Lymantia dispar) has led to the theory that transsexualism is an intersex state. Binder (1933) and after him Hamburger et al. (1953) looked upon this anomaly as intersex "of the highest degree". Dukor (1951) also mentioned the possibility of "constitutional intersexuality," and a similar opinion was expressed by Lammers (1959). Melicow and Uson (1964) suggested that the anomaly might be due to a chromosomal disorder in a postulated psychosexually discriminating gene.

Barr & Bertram's (1949) discovery of sex chromatin has led to many studies of the chromosomal sex in transvestites/transsexuals. Nearly all these studies have revealed correspondence between the sex chromatim pattern and anatomic sex (e.g., Barr & Hobbs, 1954; Bleuler & Wiedemann, 1956; Overzier, 1958b; Burchard, 1963; Benjamin, 1964c; Ball 1966), and this has been borne out by determinations of the karyotype. Some authors, however, have found male transvestites/transsexuals with positive sex chromatin (Bishop, 1958;

Davidson, 1958; Overzier, 1958a; Walter & Brdutigam, 1958; Dowling & Knox, 1963; Karl & Meyer, 1964; Money & Pollitt, 1964; Miller & Caplan, 1965; Davidson, 1966). Money & Pollitt (1964) did not find a statistically significant correlation between positive sex chromatin and transvestism. in men. Robinson (1966) mentioned a case of positive sex chromatin in a man who felt himself to be a woman, but it is not sure that this man was a transsexual, and the possibility of a complicated psychotic reaction in this case cannot be excluded. None of Bambert's (1966) 75 males with positive sex chromatin showed any signs of transvestism or transsexualism. Nor did Lindsten (1963) or Hampson (1965) find any in 49 and 13 adult Turner subjects.
Havelock Ellis (1928) contended that the anomaly was sometimes inherited, but most later authors believe that it never is. There are occasional reports, however, of transvestism among near relatives of the patient or other sexual aberrations in the family (e.g., Lammers, 1959; Randell, 1959; Taylor & McLachlan, 1962, 1963a; Roth & Ball, 1964). Anchersen's (1956) observation of transvestism in monozygotic twins is particularly interesting. Slater (1962) found that the birth order and maternal age in 36 cases of transvestism did not differ significantly from the expected figures.

In the opinion of some authors, the physical abnormalities seen in transvestism/transsexualism point to a constitutional origin, for example, the scanty beard, high-pitched voice, testicular hypoplasia and feminine build in the males and the virilism and poorly developed breasts in the females. Benjamin (1966a) reported that 40 per cent of transsexual men were underdeveloped sexually (sexual drive included), and many had the female type of pelvis and hair. Vague (1956) and Decourt & Guinet (1962) drew attention to the feminine build of male transsexuals.

It is hard to evaluate the significance of the observations reported by these authors, for they used different systems for classifying characteristics and they often only describe their patients in vague terms.

Hormones. The literature contains one case of a combination of transsexualism and an estrogen-producing tumor of the adrenal glands in which the transsexualism diminished after the tumor was removed (Routier, Paget, Ernst, Langeron, Wiart, Duthoit & Cousin, 1964). Bleuler (1954) reported a case of an androgen-producing testicular tumor combined with transvestism. Schwabe, Solomon, Stoller & Bumham (1962) reported a case of postadolescent fernininization (but a feminine personality already at the age of 4) combined with a male genotype and phenotype, but with atrophic testes, in which the subject grew less feminine after orchiectomy. Sendrail & Gleizes (1961) reported a case of a hyperandrogenic evolution syndrome (hypertrichosis, amenorrhea, enlargement of clitoris) combined with transsexualism. Stoller, Garfinkel & Rosen (1960) reported a case of a chromosomally normal man with a feminine build except for a normally sized penis and male internal characteristics, who produced an excess amount of estrogens for no discoverable reason, and showed a feminine psychosexual orientation though he had been brought up as a boy.

Green (1958) described a case of transvestism developing suddenly in connection with the development of liver cirrhosis, in which the anomaly disappeared after testosterone treatment, and he concluded that the anomaly might have been caused by the inability of the liver to conjugate circulating estrogens, with the result that they reached an abnormally high concentration. Lief, Dingman & Bishop (1962) described a case of cyclic variation between a feeling of masculinity and femininity combined with variations in the content of 17-ketosteroids in the urine. BfirgerPrinz et al. (1966) described a man with idiopathic eunuchoidism, in which hormone treatment reduced the eunuchoid features, heightened the libido, and caused disappearance of the transsexualism. Young, Goy & Phoenix (e.g., 1965) concluded after a number of animal experiments that hormonal factors must be taken into account when studying psychosexual attitudes, and Robbe & Girard (1959) stated that neuroendocrinologic factors might play a much larger part than previously recognized. Authors who have made systematic analyses of the hormone balance in large series of patients, however, have generally not been able to detect any deviations from normal (Overzier, 1955; Randell, 1959; Don, 1963; Hoenig & Torr, 1964).

Cerebral lesion. Relatively little interest has been shown in the cerebral lesions occurring in transvestism /transsexualism, though cases of this combination were described as far back as 1869 by Westphal. KrafftEbing (1892) pointed out that the anomaly might be derived from "anomalies in the cerebral organization". Pennington (1960) suggested that a cerebral disorder of biochemical nature might be at fault. Epstein (1960, 1961) made the same suggestion.

Cases of epilepsy among persons with this psychosexual anomaly provide more concrete evidence of the possibility of a cerebral lesion (Petritzer & Foster, 1955; Davies & Morgenstern, 1960; Taylor & McLachlan, 1962; Hunter, Logue & McMenemy, 1963).

Cases with abnormal EEG's have been described (e.g., Davies & Morgenstern, 1960; Epstein; Don, 1963; Hunter et al., 1963). In some of these cases, the disorders seem to be mainly of temporal origin (Davies & Morgenstern, 1960; Epstein, 1961; Hunter et al., 1963), which is interesting in view of the relationship between injury to the temporal lobes and endocrine disorders (e.g., Lundberg, 1964).

In 1965 I published a short review of the evidence in favor of origin from a cerebral lesion collected up to then in transvestism/transsexualism, as well as in other forms of sexual deviation. The same year de Martis & Ravasini (1965) published a similar study.

It has been observed that toxic conditions affecting cerebral function cause episodes of transvestism or transsexualism, or accentuate already existing transsexualism (Delay et al., 1954; Connell; 1958, Ball, 1966), and it may be that head injuries can change a previously normal psychosexual pattern into transvestism/transsexualism (Wdlinder, 1965). Cases of men have also been described in which transvestism and the feeling of being a woman developed suddenly late in life, in conjunction with the onset of senile changes such as cerebral arteriosclerosis (e.g., Fbrster, 1957).

Up to now, no one has published a series of cases of transvestism/ transsexualism in which the subjects have all been examined in consistent fashion for disorders in cerebral functioning, and so no definite conclusion can be drawn in this respect.

To sum up, more and more importance has been attached to the part played by organic factors, partly because of the results of animal experiments (Harris, 1963; Gagnon, 1965; Barton & Ware, 1966). But opinions still diverge widely. For example, Housden (1965) contended after an analysis of 75 cases from the literature, that he could not find any evidence that they were important, while other reports, as mentioned, point to an organic origin, at least in some cases.

Multifactorial theories

Some authors, especially those with first-hand knowledge of a large number of cases, are inclined to believe that the anomaly is due to a combination of factors. Benjamin (1954, 1964a, 1966a) for example, stated that it was probably due to a combination of constitutional, psychological and hormonal causes, and several others say much the same (e.g., Aubert, 1947; Delay et al., 1956; Overzier, 1958a; Burchard, 1961; Roth & Ball, 1964; Bürger-Prinz et al., 1966).

Response to treatment

Psychoanalysis and other forms qf psychotherapy. Authors with any experience of transvestism or transsexualism seem to be agreed that there is no way of getting at the underlying cause, especially in the case of transsexualism (Burchard, 1961; Benjamin, 1964a, b; 1966a; Anchersen, 1965; Barker, 1966).

Benjamin (1964a) said that in principle one should try to make the subjects adjust their minds to their bodies, for example through psychotherapy, but that this was usually impossible because the patients refused to cooperate, they do not want to change their attitude to the sex to which they belong. Gutheil (1954) said that even though the patients benefited little from psychotherapy, it did not mean that one could not explain TV/TS on psychoanalytic grounds-that one should still do all one could to make the patients understand the mechanisms leading to their anomaly.

Most patients who have improved under psychotherapeutic treatment seem to have been transvestites. Some think that this is the best form of treatment (Ostow, 1953; Thomd, 1957; Tolentino, 1957). Many say that psychotherapy or analysis is the only way to reduce the social pressure and facilitate adjustment to society (e.g., Peabody, Rowe & Wall, 1953; Israel & Geissmann, 1960), and some have reported good results with this form of treatment (Deutsch, 1954, Schachter, 1959; Schw6bel, 1960; Philippopoulos, 1964). Don (1963) said that psychotherapy was the only kind of treatment for transsexualism, that nothing else helped. Israel & Geissmann (1960) said the same, and that the physician should not give way to the patients' demand for surgical change in their anatomy.

Behavior therapy. Behavior therapy is based on Pavlov's classical theory of conditioning. With it, an attempt is made to create an aversion to cross-dressing by associating it with something unpleasant. First apomorphine and emetine were used for the purpose (Davies & Morgenstem, 1960; Barker, Thorpe, Blakemore, Lavin & Conway, 1961; Glynn & Harper, 1961; Lavin, Thorpe, Barker, Blakemore & Conway, 1961), later faradic stimulation (Blakernore, Thorpe, Barker, Conway & Lavin, 1963; Barker, 1965). The last named authors maintain that behavior therapy is the most common method used for treating sexual aberrations like transvestism and fetishism. But to get good results with this method the patients must have a suitable personality and strong motivation, be willing to cooperate, and be well equipped intellectually (Barker, 1965).

The results obtained with this method have been encouraging, both in the long and short run. Exceptions are the cases of Davies & Morgenstern (1960). It must be remembered, however, that most of the cases responding well to this treatment have been ones of transvestism without a strong tendency to transsexualism.

Administration of contrary sex hormones. Treatment with contrary sex hormones has been used mainly in cases of male transsexualism, and then often as a preliminary to surgical treatment (e.g., Hamburger et al., 1953). Jones (1960) maintained that, while some transvestites benefit from this form of treatment, transsexuals respond very little to it.

As Benjamin (1964b) pointed out, giving estrogens to male transsexuals has the advantage that it eventually leads to chemical castration. It calms the patients because it lessens their libido, and they welcome its feminizing effect. Treatment with homologous hormones, on the other hand, is only apt to make them more restless and anxious.

Surgical measures. Some recommend castration or placing the testes somewhere else, for instance in the retroperitoneal tissue in the abdominal cavity, as well as amputation of the penis and the creation of an artificial vagina. Some do all three, some one or two of these. The type of surgical treatment offered women usually consists of amputation of the breasts, sometimes combined with oophorectomy, and amputation of the uterus.

As a rule, these operations are combined with treatment with heterologous sex hormones. Operations of this kind are one of the most controversial issues in the subject of transsexualism. Many believe that one should not give in to the demands of the patients for operation, because this alleviates the condition only for a time, and because it is never possible to change a person's sex completely (Delay et al., 1956, Israel & Geissmann, 1960).

So far, not many authors have been able to look on the problem quite impartially. Besides medical and psychologic problems, transvestism/transsexualism involves ethical, legal and sometimes financial problems.

Not only do individual physicians vary in their attitude to surgical intervention (Green et al., 1966), so do also the different communities in which the patients live, and the laws by which they must abide. Hence the great difference in opinion on treatment.

One serious objection to surgical treatment is that, if the subject: change their mind about their sexual role afterwards, nothing can be done to put them right again anatomically. This is not purely an academic question-cases of this kind have been reported (Bättig, 1952; de Savitsch, 1958; Hertz, Tillinger & Westman, 1961; Hofer, 1961; Benjamin, 1964a). Again, some patients have great difficulty in adjusting themselves to the change in their anatomy (Greenberg et al., 1960, Bürger-Prinz et al., 1966). This is why reports of operation in these cases often cause a storm of protest from colleagues (Boss, 1950; Ostow, 1953; Gutheil, 1954; Bremer, 1961).

Hamburger et al. (1953) after analyzing a case of male transsexualism, drew up the following plan for the male cases in which surgical treatment was conceivable: (a) permission for the patient to wear women's clothes, (b) legal recognition and registration as a woman, (c) administration of estrogens, (d) castration, (e) demasculinization, and (f), creation of an artificial vagina.

Benjamin (1966a) seems to have had the most experience of surgical treatment. lie laid down a number of criteria which must be fulfilled for an operation to be successful, and reported the results of operating on 51 men between 20 and 58 (castration or placing the testes in the abdominal cavity, penotomy, and creation of an artificial vagina), the period of observation varying between 3 months to 13 years, with an average of 5 to 6 years. Nearly all the men lived and worked as women; 12 had married but several had afterwards divorced.

Taking into consideration the whole life situation of these patients, and their mental and physical health, judging by a follow-up examination and the reports of relatives, 44 out of the 51 had benefited from the operation, in 5 cases the results were doubtful, in 1 case unsatisfactory and in 1 case the outcome was unknown. He also reported the results of operation in 9 female cases: good in 7 cases and doubtful in 1, and in 1 case unknown, 6 had married.

Pauly (1965) analyzed the results of operation in 48 male cases of transsexualism from the literature: 42 of castration, 30 of amputation of the penis, and 20 of the creation of an artificial vagina. In 20 of these 48, the man definitely benefited from the operation, 11 were apparently not benefited, and wanted more surgery, and in 6 cases the operation was of no help at all. In 11 cases no information on the outcome was given. Pauly (1966) later reviewed the postoperative results of 99 male transsexuals who obtained sex reassignment surgery: in 64% the result was satisfactory, in so far as there was an improvement is social and emotional adjustment; in 7% the result was unsatisfactory.

Positive results have been reported by many other authors (e.g., Abraham, 1931; Binder, 1933; Boss, 1950; Glaus, 1952; 1963, Hamburger et al., 1953; Fogh-Andersen, 1956; Bowman & Engle, 1957; De Savitsch, 1958; Hertz et al., 1961; Anchersen, 1965). The authors who approve of surgical measures for some cases point to the risk of the patients mutilating themselves or committing suicide if they do not get help (e.g., Abraham, 1931; Krause, 1964).

The reports on the results of operation are naturally colored by subjective opinion, and no doubt more of the successful cases are reported than the unsuccessful. Likewise, many authors give no definite criteria for what they consider to be physical, social or sexual improvement.

Attempts to make an objective and all round evaluation of the questions in this connection have been made by Dukor (1951), Anchersen (1956, 1961, 1965), Benjamin (1964a, b; 1966a), Pauly (1965, 1966) and Stoller (1966).

Psychopharmaceutics and electroconvulsive therapy. When transvestism is associated with an anxiety state, unrest or depression, the patients have been given the conventional psychiatric methods of treatment for these conditions, such as insulin, electroconvulsive treatment and different drugs (Lukianowicz, 1959a; Eyres, 1960; Pennington, 1960; Buki, 1964; Geert-Jorgensen, 1964; Johnsen, 1964).

Prognosis

As already mentioned, while transvestites are contented if they are allowed to dress in the clothes of the opposite sex, transsexuals seldom remain satisfied with measures undertaken on their behalf, but only keep on demanding more (e.g., Lukianowicz, 1959a). The outlook seems to depend as a rule on the age of onset (e.g., Birker & Klages, 1961), the earlier the onset the worse the outlook. Green & Money (1961) and Green (1966) pointed out that one should not wait to see what happens when one sees an incongruent gender role in early years, because this only gives it time to become fixed. The importance of prophylaxis has been pointed out (e.g., Haberlandt, 1950; Green & Money, 1961; Stoller, 1966) and Green & Money (1961) drew up a plan of treatment for children showing an ambivalent sex role. Other authors have also said that one can do more to help when the patients are young than when they grow up (Dorey, 1956; Alby, 1959; Goldrach, 1963 and Roth & Ball, 1964).

As observed by Nathan (1965) and Stoller (1966) women seem to have less severe forms of the deviation than men. A picture of the general outlook in transvestism and transsexualism would not be complete without taking into account the risk of suicide and self-mutilation. Pauly (1965) found that 35 out of the 100 transsexuals he collected from the literature had threatened to commit suicide, 17 had attempted to do so, and 18 had tried or succeeded in amputating offending parts of their body.

Jan Wålinder

TRANSSEXUALISM
A STUDY OF FORTY-THREE CASES

Analysis of 207 Cases from the Literature

To study some of the variables of transvestism/transsexualism, I assembled all the cases from the literature described in any detail and to which I had access. These amounted to 207: 185 males and 22 females. It was not possible to draw a distinct line between the cases of transvestism and the ones of transsexualism. But in view of the overlapping between the two conditions (e.g. Benjamin 1964a, 1966a; Roth & Ball, 1964) I felt justified in combining them for this purpose. 93 of the 207 were of pure transsexualism; 36 showed a clear tendency to transsexualism-feeling of belonging to the opposite sex, abhorrence of their own genitals - but these patients made no demands for operation, and could not be classed as pure transsexuals, and the remaining 78 were cases of transvestism; these cases include occasional reports of a feeling of belonging to the opposite sex or dislike of their own genitals, but never of demands for operation. In none of the 207 was fetishism the dominant component and they include no case with psychotic features. The amount of data the authors gave on the features studied varied, depending on what they were most interested in. In this analysis the words transvestism and transsexualism are defined according to the criteria of Benjamin (1964a, 1966a and Roth & Ball, 1964).

- *Age of onset of cross-gender behavior*
- *Intellectual capacity*
- *Psychologic factors*
- *Familial occurence*
- *Physical abnormalities*
- *Cerebral lesions*

Age of onset of cross-gender behavior

As mentioned, most authors believe that the anomaly makes its apparence at a very early age. The patients themselves usually say that they have had the feeling of belonging to the other sex ever since they could remember. It is hard to determine the age of onset from what the patients say, however, as Worden & Marsh (1955) pointed out, one way to express the age of onset is to give the age at which the subject first dressed in clothes of the opposite sex, but this method has the disadvantage that many patients do so only sporadically, and some are prevented from doing so by various circumstances. I came to the conclusion that I could get more reliable figures for the onset of "crossgender behavior", the time the patients first showed attitudes, interests and activities characteristic of the opposite sex-than for the onset of any other feature. This time generally coincided with the onset of the subjective feeling of belonging to the opposite sex. Information in this respect was forthcoming in 137 of the male cases and 19 of the female cases. The breakdown was as follows:

	Men		Women	
	No.	%	No.	%
Before age of 10	96	70	12	63
Between 10 and 15	28	20	5	26

After 15	13	10	2	11

Thus the cross-gender behavior began before or during puberty in about 90% of the men and women. Benjamin (1964a) noted that about 6% of 108 male transsexuals began having the contrary sex feeling during puberty while about 85% had it as long as they could remember, and he found about the same figures later (1966a) in a series of 51 operated male cases. Descriptions of the first stages of the anomaly are given by several authors (e.g., Friend et al. 1954; Dorey, 1956; Schiavi and Frighi, 1956; Salfield, 1958; Schachter, 1959; Bürger-Prinz et al., 1966).

Intellectual capacity

Havelock Ellis (1928) pointed out that eonists were often unusually gifted. Loers & Schultz (1963) pointed out that intellectual subnormality was not uncommon among transvestites. Three of Don's (1963) four patients were of inferior intellect. But most authors believe that transvestites/transsexuals show a normal variation in intellectual capacity.

Information on the intellectual capacity was forthcoming for 73 of the men and 7 of the women in the series; sometimes the I Q's was only rough estimates like "moderately gifted", "average intellect", "normal intellect" or "highly intelligent". In the following breakdown, the ones said to be of average intelligence were put with those with an IQ between 85 and 115, the ones said to be unusually intelligent with the ones with an IQ over 115, and the ones said to be of below average intelligence with those with an IQ under 85.

	Men		Women	
	No.	%	No.	%
IQ below 85	13	18	1	
IQ between 85 and 115	46	63	4	
IQ above 115	14	19	2	

Thus the patients, at least the men, were apparently distributed along the normal curve of intelligence.

Psychologic factors

It is naturally impossible to assess the significance of imprinting retrospectively, but I determined the incidence of three other factors thought to be of etiologic significance: parental deprivation, being dressed in the clothes of the opposite sex, and the parents having wanted a child of the opposite sex.

Sufficient data were forthcoming in 114 of the 207 cases for an analysis of the frequency of parental deprivation. The figures were as follows:

	No.	%
Parents divorced before subject was 15	14	12
Parent died before subject was 15	18	16
Illegitimate birth	5	4
Placement in children's or foster home	8	7

Some patients came under more than one of these headings. Taking the patients as a whole, 37% of them suffered from one or more of these disadvantages. The parents dressed the patients in the clothes of the opposite sex in 20% of the cases, and had wanted a child of the opposite sex in about 9%. One of these factors,

called conditioning factors, was present in 31 cases or in about every fourth case. This tallies with Benjamin's (1964a, 1966a) figures of 21% in 108 transsexuals, and of about 24% in a series of 51 operated male cases.

Familial occurrence

Information on familial occurrence, positive or negative, was forthcorning in 178 cases. These contained 10 cases of familial occurrence, as follows:

Author	Sex of patient	Nature of familial occurence
Aubert (1947)	Male	Brother's son cross-dressed
Anchersen (1956)	Male	Monozygotic twin transvestite
Northrup (1959)	Male	Cousin transvestite
Birker & Klages (1961)	Male	Maternal grandmother's two cousins transvestites
Burchard (1961)	Male	Both paternal uncles transvestites
Stockharnmer (1962)	Male	Sister's son transvestite
Taylor & McLachlan (1962)	Male	Paternal uncle . . . "similar traits"
Glalis (1963) - Bättig (1952)	Male	Cousin on mother's side showed similar traits
Taylor & McLachlan (1963a)	Male	One, perhaps two, brothers tranvestites
Bürger-Prinz et al. (1966)	Male	Maternal uncle transvestite

Cases of particular interest from the point of view or heredity are Anchersen's (1956) and the ones found in large series by Burchard (1960, Taylor & McLachlan (1962, 1963a) and Barger-Prinz et al. (1966). Thus there were reports of a familial occurrence in about 6% of the cases. Although the figure is high, these results do not permit any conclusions on the possibility of a hereditary disposition, for cases of familial occurrence are more apt to get into print than others.

Physical abnormalities

To determine the frequency of deviations in physique in these cases all the cases treated with hormones had to be excluded, unless the state of their body before treatment was satisfactorily described. Similarly, all men with positive sex chromatin had to be excluded, because of the disorders in endocrine function with which this is usually combined. Finally, no cases of hormone-producing tumors or other endocrine disorder were included.

This left 135 men and 21 women described in sufficient detail for a study of this variable. The data in the male cases were as follows:

	No. of cases	%
Scant facial hair	15	11
Scant body hair	7	5
Testes below average size	7	5
Pubic hair of feminine type	6	4
Gynecomastia	3	2

Undescended testes	1	1

The physical anomalies noted in the female cases were:

	No. of cases	%
Underdeveloped breasts	4	19
Overdeveloped clitoris	2	10
Underdeveloped uterus	2	10
Pubic hair of masculine type	2	10

These results must be treated with caution because the different cases were naturally judged from widely divergent points of view. Some authors (e.g., Randell, 1959; Hoenig and Torr, 1964; Ball, 1966) who examined large series, and who probably judged consistently from case to case, did not observe any gross physical anomalies.

Cerebral lesions

One way of studying the frequency of cerebral lesions retrospectively is to study the frequency of EEG abnormality and epilepsy. The EEG's were often so summarily described in these cases from the literature, that they could only be classed as normal or abnormal. Information on the EEG was forthcoming in 42 cases from the literature as follows:

	Men		Women	
Author	Normal	Abnormal	Normal	Abnormal
Delay *et al. (1954)*	1	0	0	0
Petritzer & Foster *(1955)*	0	1 (epilepsy)	0	0
Schiavi & Frighi *(1956)*	0	0	0	1
Vague *(1956)*	3	0	0	0
Northrup *(1959)*	1	0	0	0
Robbe & Girard *(1959)*	2	0	0	0
Davies & Morgenstern *(1960)*	0	4 (epilepsy in 3 cases)	0	0
Ducheyne *(1960)*	1	0	0	0
Burchard *(1961)*	0	0	1	1
Epstein *(1961)*	0	1	0	0
Don *(1963)*	3	0	0	1
Dowling & Knox *(1963)*	1	0	0	0
Hunter *et al. (1963)*	0	1 (epilepsy)	0	0
Barker *(1965)*	1	0	0	0
De Martis & Ravasini *(1965)*	1	1	0	0

Benjamin *(1966b)*	12	3	0	0
Total	**27**	**11**	**1**	**3**

Thus about 33% of the cases had abnormal EEG's. Five of these patients also had epilepsy. Taylor & McLachlan (1962) reported 2 cases of transvestism combined with epilepsy, but said nothing about EEG results. Havelock Ellis (1928) mentioned a subject who had convulsions during childhood, and Esman (1954) described a subject who had convulsions during a drinking bout.

The physical history was given in detail in 85 out of the 207 cases, and epilepsy is mentioned in 7 of these (Ellis's and Esman's cases not included). One should be able to take it for granted that if the subject had shown any signs of epilepsy, it would have been mentioned in these cases. All one can say for sure about the prevalence of epilepsy in transvestism/transsexualism from this analysis, however, is that it was present in at least 7 out of 207 cases.

Jan Wålinder

TRANSSEXUALISM
A STUDY OF FORTY-THREE CASES

Own Study

Contents

Definitions used

Gender identity, or core gender identity, was used for the subjects´ conception of their own sex, their both physical and mental feeling of being a woman or a man (Stoller 1964a, b, and 1965).

Gender role was used for all aspects of the subject's behavior serving to disclose them as having the status of a boy or a man, girl or woman, including, but not restricted to, sexuality in the sense of eroticism (Hampson, 1964).

Transvestism was used only for dressing in the clothes of the opposite sex.

Transsexualism was used for a condition in which the subjects are convinced that they belong to the opposite sex and want a surgical change in their external sex characteristics, which are a source of disgust and torment.

No psychotic component need be present. Other conditions, including transvestism, may also be characterized by uncertainty as to gender identity - there is thus some overlapping - but only in transsexualism is there a demand for surgical alteration of the body. This definition of transsexualism is much like the one used by Benjamin (1964a, 1966a) and Roth & Ball (1964).

Prevalence

I used the census method in an attempt to estimate the prevalence of transsexualism, in Sweden. Thus I sent letters to all the psychiatrists (child psychiatrists excluded) in the country asking:

"Has a transvestite ever consulted you or been referred to you? If so, please let me know their names and addresses, birth dates and birth places, and whether they are still alive? By transvestites, I mean persons who feel as if they belong to the opposite sex, and who want others to look upon them as members of the opposite sex, whether they are content with only wearing the clothes of the opposite sex, or whether they also want to have their body changed to look like that of the opposite sex?"

I used the word "transvestite" because the word is much better known than "transsexual", and I defined "transvestite" to make it cover both transvestites and transsexuals.

I got the names of the psychiatrists, 474 in all, from the membership list of the Swedish Psychiatric Association and the list of doctors compiled by the Royal Medical Board for the year 1965. At the time the letters were sent, according to the Board altogether 453 psychiatrists were steadily employed in Sweden by the state or local authorities in mental hospitals or in psychiatric departments in general hospitals. As there are only a few psychiatrists with private practices in Sweden, 474 probably represented all the steadily employed psychiatrists in Sweden at the time (excluding child psychiatrists).

The letters were sent out in February of 1965 and the census date was fixed at December 31, 1965. For reckoning the prevalence I used the figures from the *Official Statistics of Sweden; Population Changes 1964*.

76% per cent, or 361 out of the 474 psychiatrists answered the letter, and together reported 91 cases. Most of them gave detailed descriptions of their cases by letter or on the telephone. A few were unwilling to disclose any details about their patients, and these had to be excluded. Two of the patients were not known for sure to be alive on the census date, and these were also excluded. All patients under 15 were also excluded.

67 of the remainder reported were transsexuals, judging by the safest criterion to use when one cannot interview the patient personally, they wanted a surgical change in sex. It was checked that none were registered more than once. Including my own 43 cases, this gave 110 transsexuals in Sweden on December 31, 1965.

Sweden having a population of 5.96 million over 15 years of age, this meant a prevalence of 1 per 54,000, 81 of the 110 were men and 29 women, giving a male/female ratio of about 2.8:1, and a prevalence of 1 per 37,000 for men and 1 per 103,000 for women.

Transsexualism is naturally more common than indicated by these figures, which only stand for transsexuals under so much strain because of their anomaly that they had to consult a psychiatrist. Six of the 110 were foreigners, but only 3 of them appear to have come to Sweden expressly for a "change in sex". As I know of some Swedish transsexuals who have gone to other countries to have plastic surgery done, the admixture of these 3 persons to the series should not distort the figures for prevalence.

Subjects

The present series consists of the 43 transsexuals who consulted my superior or myself at the Research Institute at Ulleraker Hospital in Uppsala, or at St. Jörgen's Hospital in Geteborg, or who were referred to our hospital by colleagues or the Royal Medical Board, during the period of time extending from April 1963 to December 31, 1965. Thirty two were referred to me by colleagues: 20 by psychiatrists, 4 by child psychiatrists, 4 by plastic surgeons, 2 by endocrinologists, and 2 by specialists in internal medicine; 3 were referred by the Royal Medical Board; and 8 came to me directly.

Thirty of the 43 were men, and 13 women. None were under 15 years of age and none showed any signs of psychosis when I interviewed them. The following figures give the ages of the patients expressed in whole years at the time I first saw them:

Age in years	Men (N=30)	Women (N= 13)
15-20	4	1
20-25	11	7
25-30	5	0
30-35	5	0
35-M	2	3
40-45	2	1
45-50	1	1

The men did not differ significantly from the women, either in their distribution by age or in their mean age. The range for the men was 18 to 49 years and the mean age 27.2 and the corresponding figures for the women were 18 to 45 years and 28.6 respectively.

2 of the men and 1 of the women were foreign citizens, and 1 man was a naturalized Swedish citizen. None of the 4 had come to Sweden specially for help with their transsexualism.

Sixteen of the remaining men were born in towns and 11 in rural parishes, and the corresponding figures for the women were 6 and 6, which about corresponds to the urban/rural distribution in Sweden as a whole. But there were too few cases to draw any definite conclusions in this respect. The birthplaces of the Swedish-born were spread over nearly all the counties in Sweden.

The diagnosis of transsexualism was made according to the operational definition just described. It was based on the observations I made on personal examination of the patient, and in no case was it considered final until the patient had been under observation for at least six months.

Sources of data used

1. Personal examination of the subjects, including: their personal accounts of their history, with the interviews conducted on informal lines in each case; physical and neurologic examination; body measurements; EEG-examinations; hormone analysis; examination of sex chromatin, occasionally supplemented with determination of the karyotype; analysis of personality by means of a questionnaire; psychologic tests of intellectual capacity and masculinity-femininity; examination for psychiatric disorders.

In each case I first had an informal conversation with the patient, when he or she gave me a brief account of their troubles. The next time we met they were asked to describe their particular problems in detail. After these two interviews, the patients gave an account of their history along the lines of a questionnaire used routinely at our institute. Most of the patients stayed at the hospital for a week or so while the examinations were being made.

2. Information from relatives -parents, sibs or other persons well acquainted with the subjects, such as husbands and wives.

3. Hospital records concerning birth, and from any time the subjects had been hospitalized.

4. Records of welfare agencies, including child welfare bureaus, social welfare bureaus, temperance boards, and state insurance offices. Enquiries were also made at all the psychiatric departments attached to general hospitals and at mental hospitals in the regions where the subjects had lived, as well as the two national psychiatric departments open for consultation to anyone in Sweden, and at all forms of institutions for child psychiatry, to learn whether they had ever been there for consultation. The same sources were tapped for information on the parents, except the child welfare bureaus, insurance offices and institutions for child psychiatry.

Age of conscious onset

As each patient was interviewed and examined on several occasions and all of them gave me the impression of giving a frank account of their case, and as the information they gave in other respects with that from outside sources in all except 1 case (case 37), 1 felt I could rely on what they said about the age they began to feel as -if they belonged to the opposite sex.

For further check on this point, I asked as many as possible of the parents when they first noticed the patients acting as if they belonged to the opposite sex. This I could do for 14 of the male patients and 5 of the female. In the rest of the cases, either the patients did not want me to contact their relatives, or the relatives were dead, or the patients did not know where they lived. In 17 out of the 19 cases the relatives agreed on the point of time with the patients. In 1 case (case 38) the parents had not noted anything unusual while the patient was a child.

In 1 case (case 2), in which the patient said that he first noticed his anomaly when he was 10 years old, the parents had not noted anything in particular at that time. Despite the risk that the patients might in fluence their parents' opinions on how they were as children, I concluded that the information from the parents pointed to the patients' truthfulness on this point, the breakdown was as follows:

	Men (N=30)		**Women (N= 13)**		**Total (N=43)**	
	No.	%	No.	%	No.	%
0- 5 years	20	77	13	100	33	84
5-10 years	3		0		3	
10-15 years	4		0		4	
15-20 years	1	10	0		1	7
20-25 years	2		0		2	

These figures tally fairly well with those from the literature. Thus the "cross-gender behavior" began before the age of 15 in about 90% of the male case; I collected from the literature, and in about the same percentage of the women. Benjamin (1964a, 1966a) reported much the same figures. In only 3 of the present cases (cases 6, 11, 15) all men, is it sure that the contrary sex feeling did not begin until after the age of 15.

In case 6, the transsexualism did not begin until the patient was 21, in connection with the development of gynecomastia and the observation of abnormal hormone titers in the urine. As a child the patient had been ambivalent about his gender role, though he leaned slightly towards the feminine role.

Case 11 began at about the age of 16 in connection with a change in personality. It is impossible to rule out a psychotic reaction in this case. The transsexualism persisted and grew more intense, however, though the mental condition otherwise remained stable afterwards and no signs of psychosis developed.
Case 15, already reported (Walinder, 1965), began at the age of 23, a few years after a head injury. Up to then, the patient had developed normally psychosexually. Whether the concomitant disorders in these three cases had anything to do with the transsexualism will not be discussed here. All I should like to point out here is that in all three cases in which the cross-gender behavior set in late compared with the other cases, it was preceded by another disorder.

Physical characteristics

Each patient was examined for: general body build; height and weight; general physical and neurologic state; certain body measurements, according to Lindegard's scheme (described in a special section); in men, the appearance of the external genitals, size and consistency of testes, as far as could be judged subjectively (cf. LindegArd, Morsing & Nyman, 1956), size and consistency of the prostate, judged subjectively, type and amount of terminal hair and gynecomastia; in women, gynecologic state as evaluated by a gynecologist, type and amount of terminal hair, size and consistency of breasts judged subjectively, and hirsutism.

The cases treated with hormones were not examined for the variables which might have been affected by the treatment (cases 4, 9, 11, 28, 35, 40, 42). The patients themselves were asked if they had been given hormones, and the physicians they had already consulted were asked the same.

Two patients (cases 1 and 25) had a dysplastic body build, otherwise nothing of note was observed in the general build, weight or height of the patients, the values being normal for the age and sex in each case.

The physical and neurologic examination revealed slight paralysis of the left abducens nerve, but no other neurologic abnormality in 1 case (case 13), and dorsal kyphoscoliosis, bilateral nystagmus and reduced vision in the left eye in 1 case (case 1).

As to the characteristics given special attention in the men: The penis was of infantile appearance and only 3 cm long in 1 man (case 1), who also had a shrunken scrotum; an operation done previously for undescended testes had revealed bilateral testicular atrophy. In 1 case (case 30) the testes were of extremely soft consistency, though of normal size. No prostate was palpable in 1 case (case 1). The pubic hair was of feminine appearance in about 19 per cent of the cases (cases 3, 10, 25, 27 and 29); the patients were 19, 34, 42, 18 and 21 years old, respectively. (By a feminine distribution of pubic hair is meant a straight, transverse, or slightly rounded upper outline, and no sign of extension toward the umbilicus.) One man lacked all signs of a beard (case 1, aged 29) and 2 men, aged 19 and 21, had only a suggestion of a beard (cases 3, 6); these 2 patients had never shaved. Two other men (cases 12, 25), aged 23 and 42, shaved only once a week. One man (case 6) showed distinct gynecomastia of the left breast, and 1 (case 1) had very sparse axillary hair.

As to the characteristics specially examined in the women: Nothing distinctly abnormal was noted on gynecologic examination. Two women, (cases 37 and 41), aged 20 and 45, had pubic hair of mate type (by which is meant extension reaching to, or almost to the umbilicus). Two women (cases 37 and 41), aged 20 and 45, had only infantile breasts. One woman (case 37) showed luxuriant hair around the areolae, and hair on her sternal region.

Body measurements

Tanner (1951) constructed a formula for the ratio between the bi-iliac/ biacromial breadth for discriminating between the sexes. Lindegard (1953) doubted whether the relationship between two correlated variables could be expressed as a simple ratio and instead worked out a system for comparing body dimensions by means of regression analysis. Studying representative groups of nearly 200 men of about 21 years of age, and of nearly 300 women of about 24, Lindegird (1953) found that the sexes differed in their arithmetic means for different measurements, and also in various ratios between these measurements, as seen from regression analysis.

Among other things he noted that, given the same length of the tibia, the radius was longer in men than in women-in other words, that women had shorter arms in proportion to their legs than did men. He also noted that the biacromial breadth was greater in relation to the length of the radius and tibia in men than in women, whereas the bi-iliac breadth was greater in relation to the length of the radius in women than in men.

I calculated the following relationships for all 43 of the present subjects: the length of the radius/length of tibia, biacromial breadth/length of radius, biacromial breadth/length of tibia, bi-iliac breadth/length of radius, and bi-iliac breadth/length of tibia, according to Martin's (1928) method, making each measurement twice in succession, and using the average to represent the patient in question. The numerical values are set out in Table A, in the appendix. After this I plotted the values for the various cases around Lindegard's regression lines

in graphs containing Lindegird's values for once and twice the standard deviation for the variable represented on the ordinate. The results are shown-in figures

Figs. 1-10. Relationship between various body dimensions in transsexuals distributed around regression lines for relationships in question in a population studied by Lindegard (1953). Broken lines represent once and twice the standard deviation from the regression lines for the variable rcpresented on the ordinate. Figs. 1, 3, 5, 7, and 9 are for the male transsexuals, and 2, 4, 6, 8, 10 for the female transsexuals. 1-10. As seen, as a rule about two-thirds of the observations fell within one standard deviation from the mean, i.e., the measurements were distributed about the same as in the general population.

The women differed from the men in their distribution around the regression lines as follows: Figure 4, showing the regression of the biacromial breadth on the length of the radius, shows that only 3 of the 13 values for the women fell under the regression line, while 10 fell above it. Thus the female group tended to have a larger biacromial breadth in relation to the length of the radius than do women in the general population.

The same was true of the ratio between the biacromial breadth and the length of the tibia (fig. 6), 9 values falling above the regression line. But all the measurements fell within two times the standard deviation from the mean. Lindegird also found that the sexes differed in amount of fat and muscle, but there was no point in examining either of these conditions in this series, as some of the subjects had been taking hormones, which might affect both fat and muscle. The nutritional state at the time of examination might also influence these factors.

Mental and behavioral characteristics associated with transsexualism

It is hard to assess the significance of the transsexual's mental complaints. As Worden & Marsh (1955) pointed out, transsexuals tend to stress the early onset of their feeling of belonging to the opposite sex, and to relate only those experiences and feelings which they think will help them to get what they want, an operation, for example. At the same time, as Bilrger-Prinz & Weigel (1940) pointed out, their complaints are remarkably alike from case to case.

At my first interviews of the subjects, they were asked to tell me in their own words the story of their lives and how their transsexualism developed, without my asking them any leading questions, or questions about specific complaints or attitudes. It generally took two or three interviews of about an hour and a half each to get their stories. I wrote down what they said as they went along and afterwards picked out the most frequently occurring features. They were as follows:

	Men		**Women**		**Total**		**Significance of sex difference**
Before puberty	No.	%	No.	%	No.	%	
Played with children of other sex	19	63	12	92	31	72	0
Acted like, and played the games of the other sex	20	67	12	92	32	74	0
Embarrassed by undressing in front of same sex	18	60	6	46	24	56	0
Cross-dressing							
Occasionally	11	37	3	23	14	33	0
Consistently	0	0	6	46	6	14	$p < 0.001$
Disgusted by own genitals	3	10	0	0	3	7	0
Felt as though belonged to other sex	27	90	13	100	41	95	0
	Men		**Women**		**Total**		**Significance of sex difference**
After puberty (time of interview)	No.	%	No.	%	No.	%	
Cross-dressing							
Occasionally	15	50	1	8	16	37	$p < 0.05$
Consistently	13	43	12	92	25	58	$p < 0.01$

Never	2	7	0	0	2	5	0
Disgusted by all signs of their anatomic sex	30	100	13	100	43	100	0
Felt as though belonged to other sex	30	100	13	100	43	100	0
Want to be accepted by society as belonging to other sex	30	100	13	100	43	100	0
Want surgical change of sex	30	100	13	100	43	100	0

As mentioned earlier, the patients' histories as they told them were checked with their parents, or other close relatives who had known them when they were young. The relatives weren asked to relate the histories in the same way as the patients had done, without any leading questions being asked. This could only be done in 19 of the cases. In all except 2 of these 19 the relatives' histories corroborated those of the patients, the exceptions being cases 2 and 38. The relatives of the remaining 24 patients could not be asked for various reasons.

The most frequently occurring -feature before puberty was a feeling of belonging to the opposite sex. It was only lacking in 3 cases, numbers 6, 11 and 15, in which the transsexualism did not start till the age of 21, 16 and 23 respectively.

The next most common feature was behaving and playing like members of the opposite sex. For the boys, this meant that they played with dolls, that they chose to be the mother when playing house, that they sewed and embroidered, that they helped their mother with the house work, and so on. It also meant that they refused to do what other boys did, for example, to spend any time on things of mechanical nature, play ball, play Indians and cowboys, or climb trees. The figures were about the same for preference for opposite-sexed mates younger than themselves. By this preference I do not mean that the subjects occasionally played with younger children of the opposite sex; I mean that they did so consistently. This feature is undoubtedly strongly correlated with the foregoing, which would explain the similarity in frequency.

Sixty per cent of the men and 46 per cent of the women had been embarrassed when they had to undress in front of their own sex, for instance, for the gymnastics hour at school. Many said that it seemed much more natural to change clothes in front of a person of the other sex. Other authors rarely mention this characteristic.

The patients often said it was hard to say exactly what they were embarrassed about, or what troubled them most, that it was not only a question of genitals or secondary sex characteristics. I got the impression that they were embarrassed about their body as a whole. One could perhaps speak of a tendency to dysmorphophobia which had reached the level of consciousness but had not acquired any specific character. This hypothesis is supported by the fact that before puberty only 3 of the 30 men and none of the women were discomfited or disgusted at the sight of their own genitals, but after puberty they all were.

Many began to cross-dress very early, sometimes before the age of 5, but then only because it was fun or felt better that way. From the age of 10 or so on, it became more purpose, by that time most of the patients feeling that they belonged in every respect to the opposite sex, and feeling extremely uncomfortable in the clothes of their assigned sex. Before puberty, none of the men dressed in clothes of the opposite sex all the time, but 46 per cent of the women did.

Two of the men never dressed in the clothes of the opposite sex, even after puberty (cases 22 and 24), being prevented by the kind of work they did or their social position, though they felt just as strongly as the others that they belonged to the opposite sex. After puberty, all the women dressed either sporadically or consistently as men.

The women also differed from the men in that a number of them (cases 39, 40 and 42, and probably 41) often wore clothes of neutral character, not specific of either sex, before they changed over to wearing the clothes of the opposite sex. None of the men did so.

All the patients felt as though they belonged to the opposite sex at the time I interviewed them. But they did not all want to cross-dress all the time. Thus 6 men (cases 1, 2, 6, 11, 16 and 17) said that they got attacks every few weeks for no apparent reason when they felt they must dress in women's clothing; if they could not do so when the attack came on, they became overcome with anxiety; as soon as they put on women's clothes they calmed down and felt at peace with the world. Other cases of this kind have been described, for example, by Bürger-Prinz et al. (1966) but not much attention has been paid to them.

Together with the feeling of belonging to the opposite sex and disgust at their own sex characteristics, particularly their own genitals, transsexuals are often extremely envious of the sex characteristics shown by the other sex. This is particularly true of the male transsexual. The young male transsexual is stricken with envy when the girls of his age begin to show the characteristics of the female sex. He becomes overcome with a longing to get these signs of womanhood on his own body. This desire to look like the other sex anatomically generally develops in connection with puberty, judging by the present series. The transsexual woman, on the other hand, though she feels the same aversion to her own body, does not seem to be so envious of the sex characteristics of the other sex. Thus all the men in the present series said of their own accord that they envied women their bodies, but only a few women said that they envied men their bodies. Thirteen of the 30 men had tried to make themselves look feminine by shaving their pubic hair to give it a straight upper line, by plucking out their facial hair, by shaving their eyebrows, and other measures, and one-third of the men urinated in the sitting position. One patient (case 9) had tried to castrate himself, and one (case 11) had threatened to do so.

All my patients said that they wanted a "change in sex" the first time I interviewed them. They wanted it done both legally, by having their name and sex changed officially, and anatomically, by having their body changed so as to look like that of the other sex. Only 7, all men (cases 4, 7, 11, 16, 21, 23, 28) said that they wanted this done mainly for erotic purposes. Thus only 1 out of every 6 subjects wanted to be changed so that they could take the place of the other site in physical sexual relations.

The age at which the patient comes to a physician asking for a change in sex can be taken as the age at which the patient comes into such conflict with society that he or she cannot carry on by themselves. It may also be said to be the age at which the patients are most troubled by their anomaly. It is true that if they do succeed in getting some form of surgery performed, they often come back for more. But this does not seem to be because of the transsexualism growing worse; it seems to be only a further manifestation of the transsexualism as it was before (Bürger-Prinz & Weigel, 1940).

The ages at which the patients first consulted a physician in my series were as follows:

	Men	Women
10-15 years	1	1
15-20 years	5	2
20-25 years	12	7
25-30 years	6	1
30-35 years	4	1
35-40 years	1	1
4-5 years	1	0

The mean age was 24.5 years for the men and 22.5 years for the women, the difference not being significant. The corresponding ranges were 14-41 years and 13-38 years. Delay et al (1954) pointed out that, because the anomaly seldom diminishes in strength, transsexuals are often cut off from other people, and often grow to hate their fellow-men and society as a whole. Six of the 30 men in the present series, or 20% felt that they were being persecuted, though their ideas did not reach the psychotic level (cases 4, 6, 11, 15, 21 and 25). None of the women seemed to feel persecuted.

In addition, transsexualism. sometimes leads to depressive reactions, thoughts of suicide and attempts at suicide. Before going on I shall explain what I mean by these terms.

By a depressive reaction, I mean general despondency, a feeling of hopeless and despair, sometimes combined with loss of vitality, objectively manifested by psychomotor inhibition, and loss of faith in one's own abilities, a feeling of inferiority, and in the extreme case, the desire to die; the reaction may be of any degree. By thoughts of suicide I mean a feeling that life is so unbearable that suicide is the only way out. By attempts at suicide, I mean, like Stengel (1963), "any act of self-damage undertaken with the apparent intention of self-destruction, however half-hearted and ineffective. The patient may have been only vaguely aware of his intention, which

sometimes has to be inferred from his behavior". The following are the figures for these three characteristics in the present series, in the 207 cases I assembled from the literature and in Pauly's (1965) 100 cases from the literature. The figures for my cases are based on my own observations or on information in the records of psychiatric institutions, thus not on what the patients themselves said.

	Depressive reaction %		Suicidal thoughts %		Suicidal attempts %	
Present series (N=43)						
Men	67	}68	60	}49	20	}16
Women	69		23		8	
Pauly's cases from literature (N= 100)	38		35		17	
My cases from literature (N=207)	-		12		6	

Six of the men in the present series had attempted to commit suicide (cases 2, 14, 16, 23, 27 and 28) and 1 of the women (case 43), judging by the records from the mental hospitals and psychiatric departments to which the patients might have been admitted. Probably many more attempts had been made than the foregoing figures indicate, for they only cover the ones leading to hospitalization.

The difference between the figures for the three series may have been due to the fact that, whereas Pauly's and the present series contain only cases of distinct transsexualism, the cases I collected from the literature also contained transvestites with only mild features of transsexualism.

Parkin & Stengel (1965), analyzing the about half million population of a city, found 400 and 420 verified attempts at suicide for the years 1960 and 1961; reasoning that more attempts had been made than those revealed by their method, they concluded that the incidence amounted to about one per thousand -or 0.1% as opposed to 16% series. Although they did not use the same method to get their figure as was used here, the two figures indicate a large over-representation of suicidal attempts in the present series.

Other mental disorders

The life situation of transsexuals naturally makes them particularly liable to mental troubles, but it is not always possible to say which of their mental problems are primary and which are secondary. Actually it is not impossible that things are the other way around: that mental disorders associated with transsexualism are the cause of the faulty psychosexual development.

All the subjects in my series had some kind of difficulty in social adjustment because of their feeling that they belonged to the opposite sex. The difficulty varied in amount and nature from case to case. These difficulties naturally enhanced the depressive reactions in some cases.

To see whether transsexualism was characterized by other mental components than despondency and a feeling of persecution, I examined the series for other traits sometimes occurring in these cases: manic or hypomanic, anancastic, cerebrolesional, and schizophreniform. I based my opinion on the presence or absence of these traits both on what the patients said about themselves, what their relatives and other physicians said, and my own impressions.

Before going on to the actual figures, these are the operational definitions I used: By manic traits I mean a combination of hyperactivity, elated mood and rapid thinking and associations, and an inflated opinion of oneself, generally combined with a lack of insight. When there was only a suggestion of these traits, I used the word hypomanic instead. As anancasms I classed all types of phobia, obsessions and compulsions (Skoog, 1959).

Among cerebrolesional traits I included: easy fatigability, hyperirritability, hypersensitivity to light and noise and emotional instability, often combined with memory defects and difficulty in concentrating (Lindberg, 1957). Under schizophreniform disorders; I included delusions, disorders in thought processes, and hallucinations, but not severe enough, or of long enough duration, or of such quality that they could be called schizophrenic (see Langfeldt, 1939, 1960).

The following are the figures for these disorders as well as for depressive reactions and feelings of persecution:

	Men	Women
Depressive reactions	20 (67%)	9 (69%)
Hypomanic reaction	0	1
Feeling of persecution	6 (20%)	0
Schizophreniform reaction	2	0
Anancastic syndrome	1	0
Cerebrolesional syndrome	12 (40%)	4 (31%)

Depressive reactions were the most common of these disorders, occurring equally often in the men and the women. Next most common was a cerebrolesional syndrome, noted in about every third case, and also about equally common among the men and women. The other traits only occurred in occasional cases.

In case 11, registered under schizophreniform reaction in the table, the patient had an attack suspiciously like schizophrenia when he was 16, but as he recovered completely and showed no signs of a defect when I examined him, the episode was called schizophreniform.

In case 25 the patient had been admitted to a mental hospital several times for traits of schizophrenic nature, but the diagnosis schizophreniform or epileptic psychosis seemed better in this case, because of the epilepsy and because the disorders often developed after anticonvulsant therapy was stopped for a while, and sometimes after the patient had been drinking heavily; otherwise the patient showed no signs of psychosis.

Social adjustment

Enquiries at various social agencies revealed the following concerning the transsexuals and the controls, three times the number of the transsexuals used in the analysis of family background:

	Transsexuals (N=38)		Controls (N= 112)	
	No.	**%**	**No.**	**%**
Social assistance				
Two consecutive years at most	7	19	11	10
More often	6	16	5	4
Reported for intemperance to temperance councils				
Once only	1	3	7	6
More than once	3	8	6	5
			(N= 114)	
Reported to child welfare boards for delinquency	7	18	9	8

As to the first two factors it was impossible to get complete data for two of the controls. A probably significantly greater number of transsexuals got social assistance for more than two years ($p<0.05$). Otherwise there were no significant differences.

Up until September 1, 1965, the transsexuals had been sick-listed for altogether 10,744 days against 8,288 days for the controls, who were three times their number. The transsexuals were sick-listed for mental disorder for 8,000 of the 10,744 days, and the controls for 1232 days. Four patients, or 11% had never been sick-listed, against 27 of the controls, or 24%, the difference is not statistically significant.

Sex object choice and sexual urge

I classified the patients for three variables of sex object choice: the sex with which they had sexual activity, the sex which excited them mentally, and the sex they imagined themselves with while masturbating; also classed them according to sexual urge: if they said of their own accord that they had such a strong sexual urge that it was hard for them to control or satisfy themselves, I called the libido strong; if they said that they never, or hardly ever, felt any sexual desire, and had hardly ever masturbated, I classed the libido as weak; in the rest of the cases I classed the urge as moderate.

For all these classifications I took the whole time from puberty until the time the patients consulted me into consideration, the final classification being a kind of average.The following is the breakdown on sexual activity:

	Men (N= 30)		**Women (N= 13)**	
	No.	**%**	**No.**	**%**
Chiefly or only homosexual experience	16	53	8	61
Chiefly or only heterosexual experience	6	20	1	8
All sexual activity denied	8	27	4	31
The figures for the sex exciting mentally were:				
Same sex	28	93	13	100
Opposite sex	2	7	0	0
Ambiguous	0	0	0	0

Three of the 6 male patients (cases 2, 10, 15, 16, 17, 25) who claimed to have had chiefly or only heterosexual experience were married men, all with children (cases 2, 10, 15). None of these 3 were satisfied by their sexual relations with their wives. One (case 15) has had normal heterosexual relationships before marriage, however at the time I interviewed them, all 6 men said that acting as the male in sexual activity felt wrong, peculiar or unnatural. They were all, at the time I examined them, erotically stimulated mentally only by their own sex. Several of them were greatly troubled by this discrepancy.

The same was true of the only female patient (case 37) who had mainly heterosexual relations. Two of the female patients had married many years ago, but had soon divorced, mainly because of sexual maladjustment (cases 41, 43). Three of the women had tried to curb their homosexual tendencies, mostly because of the criticism of others (cases 31, 37 and 43). Two women had children as the result of temporary heterosexual relations (cases 37, 43) but the feeling of belonging to the other sex grew more intense, rather than weaker, during pregnancy, and at least one of the women (case 43) felt as if her pregnancy were against the laws of nature.

Twenty-five of the men and 6 of the women said that they masturbated. Twenty men said that they always thought of other men when they masturbated, generally of playing the female role in sexual intercourse. All 6 women who said they masturbated had homosexual fantasies while they did so. Five men and 7 women said that they did not masturbate. These corresponding to 17 and 54%, the sex difference was probably statistically significant ($p<0.05$). Five of the men (cases 4, 7, 11, 21, 23) had a strong sexual urge, 19 a moderate urge, and 6 a weak urge (cases 1, 3, 9, 10, 25, 29). Ten of the women had a moderate sexual urge and 3 a weak one (cases 33, 34, 37).

Five patients both had a weak libido and said that they had not had any form of genital activity with another person, 5 had a weak libido and said that they had never masturbated, and 5 had not had any form of sexual activity or masturbated. Thus there was a combination of two of these factors in 10 cases, 5 male and 5 female (cases 1, 3, 9, 10, 29, 32, 33, 34, 37, 38) or in about 23 per cent. But no patient in the series seems to have been quite indifferent sexually. Thus all 10 were mentally stimulated to some degree by persons of their own sex. The same was true of all but 2 of the others (cases 2, 15). In view of the fact that the sex one chooses for physical relations often depends on circumstances (Kinsey et al., 1948), the sex which excites a person mentally should be more reliable for indicating whether a person is heterosexual or homosexual. Using this criterion, all but 2 of the patients were basically homosexual. This is substantiated by the fact that, except in cases 2 and 15, the patients were mentally attracted by only one sex-their own from the time they became aware of their sexual urge.

Personality

The way transsexuals behave when they come for medical consultation does not need to reflect their original personality. By the time they take this step, they have been in conflict with society and Linder great mental strain for a long time, often many years.

Nevertheless, because so few systematic studies have been made of the personality of transsexuals I tried to see whether it differed in any way from the ordinary.

For this purpose I used a questionnaire constructed at the Psychiatric Department of Sahlgrenska Hospital, Gdteborg, for eliciting syntonic traits, asthenic traits, hysteroid traits and schizothymic traits. This questionnaire, originally worked out by Lindberg (1939), has since been modified by Skoog (1959) and Jansson (1964), and I used Jansson's version. In addition, I noted whether or not the patients were psychoinfantile in the sense of Lindberg (1950, 1953).

The questionnaire contains seven questions per trait. Whenever the patients answered Yes to a question, they were given one point, whenever they answered No, one point was subtracted, and whenever they did not know how to answer, they were scored zero. Whenever their score on the seven questions for a trait lay above zero, they were classed as having at least a certain degree of the trait in question. The patients were classed as psychoinfantile if they both gave me a childish impression and answered No to the question whether they felt as secure now as they had done when they were children.

One of the men (case 15) refused to answer the questions. All the other subjects did so.
First the results on the questionnaire:

	Answered Yes			
	Men (N= 29)		Women (N= 13)	
	No.	%	No.	%
Syntonia				
Are you a sociable person, liking to be with other people?	22	76	6	46
Do you feel sorry for people in trouble, and take part in their suffering?	23	79	9	69
Do you react emotionally to nature? Does it give you pleasure to see something beautiful?	12	41	4	31
Do you react intensely to setbacks and successes in your life?	18	62	6	46
Are you sensitive and easily moved?	25	86	9	69
Are you a practical, down to earth person?	16	55	9	69
Do you sometimes get happy or unhappy for no specific reason?	17	59	4	31
Asthenia				
Is it hard for you to make up your mind?	11	38	0	0
Do you dislike having attention drawn to you, and feel uneasy in a situation to which you are not accustomed?	14	48	6	46
Are you careful, and want everything done your own way?	15	52	5	38
Are you afraid of forgetting things, and have to keep checking?	13	45	6	46
Do you tire easily?	15	52	0	0
Do you feel tense and rushed?	25	86	8	62
Do you worry about what may happen, and about how you are going to be able to cope?	19	66	4	31
Hysteroidia				
Are you impulsive, and do you make up your mind quickly?	19	66	4	31
Do you agree that variety is the spice of life, and like gaiety and excitement?	18	62	3	23
Have you got a vivid imagination, and do you get carried away easily?	19	66	3	23
Do you get along easily in any group of people?	17	59	5	38
Do you take sudden likes and dislikes to people and things?	16	55	4	31
Are you interested in the arts?	18	62	6	46
Are you apt to feel misunderstood, and that you don't get the consideration you should?	16	55	5	38
Schizothymia				
Are you stubborn? Once you have made up your mind, do you stick to it?	23	79	8	62
Are you suspicious, and apt to believe that people mean something else by what they say?	11	38	1	8
Are you apt to bear a grudge?	9	31	4	31

Do you like being by yourself? Do you tend to avoid being with others?	4	14	4	31
Are you more for what is useful and practical than for what is fun or beautiful?	6	21	5	38
Are you exceptionally sensitive to criticism or what others think of you?	9	31	3	23
Do you stand by your principles, no matter how unpleasant they may make it for you?	5	17	1	18

The only separate questions on which the men and women differed significantly in their answers were: "Is it hard for you to make up your mind?" ($p<0.05$) and "Do you tire easily?" ($p<0.01$), as well as "Do you agree that variety is the spice of life, and like gaiety and excitement?" ($p<0.05$), and "Have you a vivid imagination and do you get carried away easily?" ($p<0.05$). The men answered Yes more often to these four questions. Judging by the separate scores on these traits, the series was characterized as follows:

	Total (N=42)	**Men (N=29)**		**Women (N=13)**		**Statist. sign. of sex difference**
Trait	**%.**	**No.**	**%**	**No.**	**%**	
Syntonic	79	24	83	9	69	0
Asthenic	45	17	59	2	15	$p < 0.05$
Hysteroid	60	21	72	4	31	$p < 0.05$
Schizothymic	31	9	31	4	31	0

The men were probably significantly more often asthenic or hysteroid than the women. This is interesting in view of LindegArd's (1966) recent observation that women are more often syntonic, asthenic and hysteroid than men as a rule. He based this conclusion on interviews of about 100 men and 100 women, and used essentially the same method as I did, though not exactly the same operational definitions.

Eighteen of the men, or over 50 per cent, were classed as psychoirfantile, but only 2 women; the difference was statistically significant ($p<0.02$). Lindberg (1953) pointed out that psychoinfantilism is often combined with syntonic, asthenic and hysteroid traits, and that psychcinfantile persons show a combination of these traits significantly more often than do controls. Fifty-nine per cent of the psychoinfantile patients in the present series were both syntonic, asthenic, hysteroid and schizothymic, or lacked only one of these traits, against 26 per cent of the patients who were not psychoinfantile.

The most common combination of traits in my series was asthenia, syntonia and psychoinfantilism. The next most common was asthenia, hysteroidia and syntonia, also combined with psychoinfantilism.

Because it is so hard to determine the original personality of transsexuals and because my series was so small, and because one must reckon that the frequency of various traits depends on mental state (Jansson, 1964) and age (Skoog, 1959; Lindegdrd, 1963)-I concluded that there was no point in comparing the results from my series – except with those obtained in studies using much the same method. Jansson (1964) used almost exactly the same method in a study of mental troubles in connection with childbearing. Skoog (1959) also used much the same method for a study of anancasms. Skoog classified his subjects according to whether they showed a moderate degree, a strong degree or none at all of asthenic, syntonic and hysteroid traits, and according to whether or not they had schizothymic or psychoinfantile traits, and in order to be able to compare his figures with those from the present series, I pooled his moderate and strong degrees of the first three traits.

Comparison between the figures from the present series and from Jansson's control group of 135 women, and Skoog's control group of 2962 persons admitted to a psychiatric department, shows the following:

	Present series		**Jansson (1964)**	**Skoog (1959)**
	Women (N= 13)	**Men + Women (N=42)**	**Women (N= 135)**	**Men +Women (N=2962)**
Syntonic	69	79	79.7	81.0
Asthenic	15	45	28.2	46.1

Hysteroid	31	60	30.4	52.5
Schizothymic	31	31	7.4	14.5
Psychoinfantile	15	48	6.7	15.9

The only noteworthy difference between my series and the others was that mine contained a much greater number of schizothyrnic subjects than either of the other series, a much greater number of psychoinfantile subjects than Skoog's series, and a smaller number of asthenic and syntonic subjects than did Jansson's normal women.

Masculinity-femininity measured with psychologic tests

So far no one seems to have examined a large series of transsexuals with psychologic tests measuring masculinity/femininity. Different people mean different things by masculine and feminine. In psychologic terms , masculinity may be defined as ways of behaving and thinking more common among males than among females, and femininity the reverse.

Tests of the questionnaire type are most commonly used for measuring these properties-for instance, the Attitude -Interest Analysis Test (Terman & Miles, 1936), and the MF scale from the MMPI (Hathaway & McKinley, 1951), in which most of the items deal with interests. But nonverbal, projective techniques have also been used, for instance, the Thematic Apperception, Rorschach, and Draw a Person tests, and the Frank Drawing Completion Test devised specifically for measuring masculinity-femininity.

While the scores on different tests of the questionnaire type generally agree well, they generally agree poorly with the scores on projective tests. It has been assumed that this is because some persons might identify themselves consciously with one sex and unconsciously with another-that they reveal their conscious image of themselves in their scores on the questionnaire type of test, and their unconscious image in their scores on tests like drawing completion tests.

Marke & Gottfries (1967) recently discussed the value of different masculinity-femininity measures in detail.
I measured the masculinity-femininity of the transsexuals in this series with both verbal and nonverbal tests. For the verbal tests I chose one constructed in Sweden by Marke & Gottfries (1967) and found to distinguish well between the sexes in representative Swedish populations. In addition I used the MF scale from the MMPI because this is an internationally known test and seems to be good for discriminating in this respect. For nonverbal tests, I used the Frank Drawing Completion Test, or FDCT (Frank & Rosen, 1949), and a modification of the Draw a Person test (Machover, 1949).

Marke-Gottfries Attitude-Interest Questionnaire

This questionnaire aims to measure two aspects of masculinity and femininity-in emotions and in interests. Some of the items are based on items in the Terman-Miles test.

Factor-analytic study of the different subscales in their test revealed two relatively distinct factors in the masculine-feminine complex, one they named interest and the other emotionality-sensitivity. They interpreted the first factor as a preference for activities conventionally associated with the sex roles; this measure of masculinity-femininity seemed to depend more on attitude to feminine than to masculine activities, masculinity implying largely repudiation of what is considered typically feminine. The second factor they interpreted as a tendency to sympathize, to take dislikes and to become morally indignant, masculinity in this respect implying refusal to admit feelings of this nature. They also got out a third factor. They found this hard to interpret, but named it "stereotyped toughness", as it seemed to consist of a tendency to think of oneself as tough, aggressive and dominant.

The first factor (1) had its highest loadings in the subscales containing questions on occupation, books and hobbies. On occupation, they found that questions on beauty experts, interior decorators and pediatricians discriminated well. On books, titles like "A dance phantasy", "Susan gets married", and "The enchanted garden" were good. On hobbies, they found that questions on boxing, motor sports, sewing.; knitting, interior decoration, and musicals discriminated well.

The second factor (11) had its highest loadings in the subscales containing questions eliciting propensity to sympathy, propensity to likes and dislikes and a feeling for ethics. For the first of these they were asked, for example, how they felt when they saw someone hitting a child or when they saw an old person with an incurable disease; for the second, on what they thought of brutal fights in films or on television, the sight of a drunk man, and obscene language and swearing; for ethics, they were asked what they thought about reading other people's letters, of insulting people in the presence of others, and of corporal punishment.
The third factor (111) had its highest loadings in subscales including questions about frightening events or things, games, and various combinations of animals. Good sex-discriminating items for the first were ones concerning getting lost in the woods, firearms, and mice; for games, questions concerning skipping, playing house, Indians and cowboys; and for the third the combinations lark-hawk, wasp-butterfly and swan-eagle, the subjects being asked which of each two animals they would prefer to be.

Marke & Gottfries added the raw scores on the subscales tapping these three factors best, and used the sum to represent the subject in question without doing any form of weighting. They called these sums Index I (interests), Index 11 (emotions) and Index III (stereotyped toughness). High scores for these indices indicated masculinity and low scores femininity.

For cross-validation of the results they first obtained, they tested all the children in the 8th grade (ca. 15 year olds) in a town of about 40,000 people, altogether about 700 pupils. On reckoning the means, standard deviations, critical ratios and point-biserial correlation coefficients for the subscales and indices for males and females, they found that all the CR's and rpbi,,'S were statistically significant ($p<0.001$). Thus it may be assumed that both the subscales and indices discriminate between the average male and female in Sweden.

Marke & Gottfries (1966) also reported the indices obtained from a mixed group of subjects between 20 and 25 years old -91 men and 243 women students at the School of Social Work, and colleges for training kindergarten teachers, nurses and mental hospital assistants. Here, too, the men and women differed significantly. The results in this series and the foregoing were as follows:

	15 year olds			**20-25 year olds**		
	No.	**Mean**	**SD**	**No.**	**Mean**	**SD**
Index I						
Men	341	68.1	10.6	81	51.3	8.9
Women	341	39.1	9.5	243	32.7	8.5
Index II						
Men	341	48.2	15.3	81	54.4	12.1
Women	341	35.9	12.3	243	39.2	11.2
Index III						
Men	338	61.8	8.4	81	59.8	7.7
Women	339	38.4	10.2	243	40.8	8.2

Altogether 40 of the present patients answered the Marke-Gottfries Attitude-Interest Questionnaire in full, 29 men and 11 women. The remaining 3 refused to complete it. The results were as follows:

	No.	Mean	SD	Statistical significance of sex difference (normal approximation according to Mann & Whitney)
Index I				
Men	28	25.0	8.3	
Women	11	53.1	13.1	p<0.001
Index II				
Men	29	32.6	14.9	
Women	11	45.3	12.3	p < 0.02
Index III				
Men	26	30.0	11.4	
Women	11	60.	4 8.2	p <0.001

The sex difference was significant for all the indices, judging by the Mann-Whitney U test with correction for ties and the two-tailed procedure. Judging from the results on this questionnaire, the transsexual men were significantly more often feminine than the transsexual women, and vice versa.

Comparing these figures with those obtained by Marke & Gottfries shows that, for every index, the relationship between the scores of the men and women was the reverse in the transsexual group of that in the control groups; in fact, the transsexual men were more feminine in all three indices than the women in the normal groups. But the corresponding was not so often true of the transsexual women. Clinical experience bears this Out. The male transsexual is more feminine than the average female in the way he gestures, the way lie moves, the way he speaks and in what he says; he seems to be striving for the very ultimate in femininity, and that is why he so often seems so affected. The female transsexual behaves more naturally.

MF scale from the MMPI

As mentioned, the MF scale from the MMPI is chiefly concerned with uncovering what the subject is interested in. The higher the raw score on this test, the more feminine the subject is in interests.

Twenty-two of the male transsexuals and 10 of the women received this test. The others are missing mainly because I did not include this test in my battery to begin with, and it was hard to arrange for standard experimental conditions after patients had left the hospital. Otherwise the test was administered and scored according to the norms given by Hathaway & McKinley (1951).

The mean raw score for the men was 32.9 with a standard deviation of 5.0, and the mean raw score for the women was 26.7 with a standard deviation of 3.3. Thus, here again the results for the men and women were the reverse of those obtained from men and women in general.

Testing the significance of the difference between the men and women by the same method as for the Marke-Gottfries questionnaire revealed that it was significant ($p<0.002$).

Frank Drawing Completion Test

The Frank Drawing Completion Test (FDCT) consists of 36 unfinished drawings which the subject is asked to complete and which it has been found that men and women complete differently.

This test has the advantage that the subjects do not know what way of completing the pictures will be considered masculine and what way will be considered feminine, as they can guess to a certain extent in verbal tests. It was given to 27 men and I I women in the present series. Four patients refused to finish it, because it was too "silly", they said, and I patient could not do it in time for the analysis of the results. Whether the results would have been different if these patients had done the test, is impossible to say. The 4 who refused may have done so because they did not want to take the risk of drawing "wrong". The results were all interpreted by the same person, specially trained for this test, and who did not know to what sex the various subjects belonged.

The following are the results. For the sake of comparison the results from Marke and Gottfries's two series are shown alongside.

	Transsexuals			Marke & Gottfries 15 year olds			Marke & Gottfries 20-25 year olds		
	No.	Mean	SD	No.	Mean	SlD	No.	Mean	SD
Men	27	11.9	3.6	335	15.4	3.7	70	15.4	3.4
Women	11	14.4	5.0	328	13.5	3.9	175	13.3	3.5

Once again the relationship between the scores of the male and female transsexuals is the reverse of that in the controls. The difference between the men and women in the transsexual group was not significant, judging by the Mann-Whitney U test ($0.05<p<0.1$), confirming indirectly the experience of others that other tests are better for discriminating between the sexes. These results also indicate that the male transsexuals were more feminine than the ordinary female, but the corresponding was not true of the scores of the female transsexuals. Though the transsexual men and women did not differ significantly in their scores on this test, they showed a larger sex difference, though in reverse, than did the normal series.

Draw a Person Test

Brown & Tolor (1957), examining the literature on the Draw a Person Test, found that adults tended to draw a person of their own sex first (91 per cent of men and 63 per cent of women). Series of persons with personality disorders have yielded essentially the same results (Hammer, 1954; Mainord, 1953). Brown & Tolor (1957) also found that the same was true of homosexuals as a rule, despite the general opinion that drawing a person of the opposite sex first is a sign of homosexuality; they concluded that the adequacy of psychosexual identification or adjustment was not reflected in the sex of the human figure the subjects drew.

A modification of the method advised by Machover (1949) was used in the present study. I gave the subjects a pencil and a.sheet of white paper of ordinary typewriter size and asked them to draw a full-length picture of a person. Every time the subject asked a question I repeated the same request. Only one drawing was asked for, and I myself supervised all the drawing. The drawings were scored mainly for the sex of the person drawn, but attention was also paid to the general impression given by a number of characteristics, such as clothes and anatomic details.

Five drawings had to be excluded from the Subsequent analysis because it was not clear what sex was intended (I male and 4 female patients). One man refused to do the drawing and 2 men could not do it under standard

conditions. This left 35 drawings. The following figures shows the results from these 35 transsexuals compared with the figures from Brown & Tolor's (1957) collection of cases from the literature.

	Sex first drawn			
	Own sex		Opposite sex	
	Men	Women	Men	Women
Transsexuals, 26 men and 9 women	39	33	61	67
Brown & Tolor (1957), 531 men and 676 women from literature	91	63	9	37

As seen, the results from the transsexuals, especially the men, were the opposite of those from Brown & Tolor's series. Though the male and female transsexuals did not differ significantly in number drawing the opposite sex, the results show the reverse pattern to those from a normal population.

As a rule, the transsexuals went into great detail in their drawings; most of them filled in details like nostrils and life-like ears on the heads, and carefully delineated each finger on the hands. The male transsexuals drawing women often dressed them in evening gowns, and decked them with jewels and other ornaments. Several drew bodies in the nude. Many of the opposite-sex drawings done by the transsexuals, particularly those done by the men, stood out in their exaggerated depiction of sex attributes. To sum up, the male transsexual generally drew a person of the opposite sex, in careful detail, often naked or lightly clad, and with exaggeratedly female characteristics. The drawings from the women were not so exaggerated; they were more elegant, and more life-like.

Intelligence quotient

The SRB tests, described by Dureman & Sälde (1959), were used for determining the intelligence quotient. One man refused to take the test, and one man and one woman spoke too poor Swedish to be able to do so. One man and one woman did not take the test for various reasons while they were in the hospital, and they lived too far away afterwards for them to be able to take it under standard conditions. With the possible exception of the man who refused, these exclusions could hardly have distorted the results as a whole. One of the men excluded had had his IQ measured while he was doing his military service, but with a different method, and he is not taken up in the following tabulation.

IQ range	Men(N=27)	Women(N=11)
- 74	3	0
75- 84	2	2
85- 94	4	1
95-104	10	5
105-114	4	3
115-124	3	0
125-134	1	0

The men had a mean IQ of 98.0 (SD 12.3) and the women one of 100.0 (SID 9.9). Together, they had a mean IQ of 98.6 with a standard deviation of 13.6. The sex difference was not statistically significant.

Three of the men had an IQ under 75. One of them had attended a special class at school (case 29) and many members of his family were mentally retarded. Another (case 25) had a brain injury when he was young, and got

epilepsy afterwards; he showed clear signs of brain injury when I interviewed him. The third man (case 26) was a foreigner, and linguistic difficulties may have been the reason for his low IQ; thus, his answers on the synonym test in the battery were below average for his age. The man for whom I had only the IQ from the military service record had got an average score for his age. These results indicate that transsexuals do not differ from the general population in IQ distribution or mean.

Hormones

The urine of as many patients as possible was examined for total gonadotropins, 17-ketosteroids, 17-hydroxycorticosteroids and estrogens. Some were also examined for FSH, LH, fractionated estrogens, and pregnanediol.

The urine was collected in the conventional way under supervision while the patients were in hospital.
Nearly all the analyses were done at the Hormone Laboratory at the Karolinska Hospital in Stockholm, one was done at Sahlgrenska Hospital in Gateborg, and she rest were done at the Hormone Laboratory at the University Hospital in Uppsala.

Thirteen cases had to be excluded from this part of the study: 7 because they were under hormonal therapy at the time and no data were available on their hormones before the therapy was begun; 5 cases because the urine was not collected the way it should have been, and I case because the urinalysis was a failure and it was impossible to get new specimens under proper supervision. The results in the remaining 30 cases are shown in table B in the appendix.

The following is a review of the data of interest obtained from the various laboratories:

Five of the 16 men whose total gonadotropins were measured had values under or about 6.5 MU per 24 hours, which was said to be low for their age, though not definitely abnormal (cases 7, 10, 19, 24 and 30). In another case (16) the value was under 13 MU, which was also considered low. One man (case 1) had a low titer of FSH. Another (case 3) showed a suspiciously high level of total gonadotropins -about 53 MU per 24 hours.
Two of the 7 women whose total gonadotropins were measured showed values under 6.5 MU per 24 hours (cases 38 and 43).

Thus altogether 9 out of 25 examined cases showed low, though not definitely abnormal values for total gonadotropins or FSH and one man showed a tendency to an unusually high value of total gonadotropins.
As to estrogen hormones, I man (case 30) showed a high level in view of his age, and another (case 3) also showed a tendency to. high values on fractionated determination, though not definitely abnormal values.
None of the patients examined showed anything definitely abnormal in their 17-ketosteroids or 17-hydroxycorticosteroids.

One of the 9 patients examined for pregnanediol (case 6) showed abnormal values of 7.0 and 3.8 mg per 24 hours. This man, who also had unilateral gynecomastia, starting about a month before he consulted me, was examined at an endocrinologic department without any reason for the gynecomastia being found there. The transsexual tendencies in this case had become accentuated shortly before, or at the time the gynecomastia made its appearance.

Electroencephalogram

The curves were registered with a Kaiser or Grass electroencephalograph, with the 10-12 electrode system recommended by the International Federation, and conventional leads. First tracings were led off for about 30 minutes with the subject resting, then for a period with the patient overbreathing, and lastly during photostimulationon with the Kaiser stroboscope, in most cases according to the method described by Selld6n (1964).

Whenever the patients had undergone more than one EEG examination, their elect roencephalographic characteristics were judged from the record taken in connection with the present study. The EEG could not be taken in I case for technical reasons, and I subject was not tested with photostimulation because this had caused an epileptic fit when it was done before.

The curves were classified as normal, borderline or abnormal, according to the criteria used routinely at the Neurophysiologic Department at the Neurologic Department of the G6teborg University. A normal record, according to these criteria, is characterized by an alpha rhythm with a frequency of 8-13 c/s interspersed with varying amounts of beta rhythm; if any activity between 5-7 c/s is present, it should not take up more than 10 to 15 per cent of the record, and be distributed symmetrically, or almost symmetrically, over the two hemispheres, and have the same amplitude as the alpha rhythm; this corresponds to the oneplus category in a three stage classification (e.g., Frey & Steinwall, 1953).

In the following tabulation the alpha frequency was taken as the average in four one-second sections of the tracings from the temporooccipital leads. The term paroxysmal activity covers both sharp waves and spikes and bursts of low-frequency waves with an amplitude at least twice that of the background activity, and focus covers abnormal activity over a limited region, or mostly over a limited region. The response to hyperventilation was considered abnormal when high waves with a frequency of 3 c/s appeared within the first two minutes and persisted more than 30 seconds after the sub ect stopped over-breathing. The results were as follows:

	No. of patients
Alpha frequency	
8.5 c/s	1
9-11 C/S	40
Undecided	1
Low-frequency, nonspecific dysrhythmia	
Mild, one-plus	33
Moderate, two-plus	9
Rhythmic activity in temporo-occipital region	
5-6 c/s	4
3-4 c/s	1
Paroxysmal activity (in I case in sleep record)	2
Focus	3
Abnormal response to hyperventilation	7
Abnormal response to photostimulation	1
General class of record	
Normal	21
Borderline	9
Abnormal	12

No record showed anything of note in regard to beta rhythm, and none showed any rhythmic delta activity. One record showed a focus of abnormal activity in the right occipital region, another in the right temporal region and another in the left fronto-temporal region.

Eight of the subjects with abnormal EEG's were men (cases 4, 7, 12 13, 15, 16, 19, 29) and 4 women (cases 31, 33, 38, 42), which is a sex ratio about corresponding to that in the whole series. Six of these were getting contrary sex hormones at the time their EEG's were taken, and 5 of the 30 with normal records were getting these hormones. None were getting any drugs which affect the EEG. Whether the administration of sex hormones has any effect on the EEG is not known, but the foregoing figures do not point in that direction.

Sex chromatin

Specimens of the buccal mucosa were taken, and fixed and stained according to the method described by Klinger & Ludwig (1957). As a rule, 50 cells were examined in each specimen. When a specimen did not contain enough suitable cells, another specimen was taken. All the slides were examined by a laboratory assistant

specially trained in this work. All 43 subjects were examined. In 2 cases the chromosomes were studied after blood culture.

After the laboratory assistant had examined the slides once, another laboratory assistant went through them again. In each case her verdict agreed with that of the first assistant.

No discrepancy was noted between the sex chromatin pattern and phenotype in any case, the 30 men being chromatin negative and the 13 women chromatin positive. Normal karyotypes were obtained from the two cases in which it was studied: 46/XY and 46/XX.

Mother's condition during pregnancy and circumstances of birth

Thirty subjects were born in a hospital. In 28 the hospital records of the birth could be obtained. In 2 cases no objective information was forthcoming. The only relevant information in the records for the first 28 cases was that in 2 of them (I and 13) the amniotic fluid was discolored.

Two of the subjects delivered at home were of twin birth (cases 25 and 30). Both sets of twins were apparently bi-ovular. This was confirmed from hospital records in I case (25) in which the patient did not want me to talk to his twin. The other set of twins were bi-sexed. Otherwise no data were forthcoming concerning the patients delivered at home which pointed to complications of pregnancy or delivery.

The male subjects delivered in hospital weighed between 2400 and 4740 g, and the female subjects between 2915 and 3860 g, the mean weight being 3502 g and 3374 g, respectively, and for both sexes 3475 g.

Circumstances in history of patients

The following data on the subjects' physical history during infancy and childhood are based on information from the subjects, from their relatives, and from hospital records. Many years had passed since most of the patients were children, and it is quite possible that both the patients and the other informants had forgotten even serious accidents and illnesses during their childhood. But I did my best to obviate this by asking questions about specific conditions, especially about conditions just after birth, and about: children's diseases, fever affecting the general condition, fever convulsions, fever delirium, infections in the central nervous system, head injuries, concussion, convulsions and metabolic disorders.

Neonatal period. I use the word neonatal in the conventional sense, to cover the first two weeks after birth. The obstetric records gave a certain amount of information in this respect, as the children born in a hospital were generally kept there the first week. Nothing abnormal was noted during the first week for the 28 delivered in hospital, and nothing abnormal could be remembered about this period for the subjects delivered at home. Apparently, therefore, the first two weeks were free of complications, at least for the 28 subjects born in hospital, because anything abnormal in them when they left hospital would almost certainly have been noted in the record.

From 2 weeks to 3 years of age. The following data were confirmed by hospital records: One subject (case 1) was hospitalized under the diagnosis of hydrocephalus and tonsillitis. Later on, it was suspected that rickets might have caused the abnormal roentgenographic appearance of the skull leading to the hospitalization, but the roentgenographic findings here are still indefinite. One subject (case 36) was hospitalized at the age of two months under the diagnosis of dyspepsia and anemia; she recovered completely. One subject was hospitalized for concussion (case 13).

The following diseases did not lead to hospitalization and could therefore not be confirmed: One subject (case 8) had poliomyelitis according to relatives, which had disappeared without a trace. One subject (case 29) had severe scarlet fever, and his hair fell out afterward; this patient was slow in learning to talk. One patient (case 31) had severe measles complicated by fever convulsions. One subject (case 6) had cerebral concussion.

After 3 years of age. The following data were confirmed by hospital records: One subject (case 25) had severe concussion at about 8 years of age, followed by headache, dizziness, difficulty in concentration and hypersensitivity to noise for a few years; when he was 14 epilepsy of the grand mal type developed. One subject

(case 15) got concussion at the age of 18; up to then he had developed normally psychosexually, bLit after the concussion, transsexualism set in, and grew steadily worse. One subject (case 13) got concussion and a small cranial fracture at the age of 7 and afterwards speech disorders developed. Another (case 17) got concussion and fracture of the femur at the age of 9; he was confused the first two days after the injury. Two subjects (cases 13 and 16) had diabetes mellitus; in I case (16) the disease started between the 3rd and 4th year, and this patient had had repeated attacks of either insulin or diabetic coma; in the other case (13) the diabetes was discovered at the age of 22. The patient in case 18 had facial tics at the age of 5, and he was examined at the age of 10 for a defect in the frontal bone. No signs of a tumor were seen, and the EEG, which was first abnormal, later grew normal.

One patient (case 33) was kept under observation for a long time at a department for child psychiatry, and the records state that she appeared to have attacks of petit mal, but they do not describe the attacks in sufficient detail for it to be possible to say definitely whether or not she had some form of epilepsy. While her electroencephalogram was being taken she got an epileptic fit on photostimulation. She showed no signs of epilepsy at any time during the week she was at our institute, however, the other diseases and accidents the patients had had -a wide variety -had all happened while they were adults and after the transsexualism had started.

Neurotic traits during childhood

In view of Roth & Ball's (1964) observation that transsexuals showed more neurotic traits in childhood than a matched group of adult neurotics, (and homosexuals even more), I collected data from the present series on the occurrence up to the age of 15 of: nail-biting, sleep disorders and nightmares, somnambulism, enuresics, encopresics, stammering, tics, anxiousness, irritability, aggressiveness, and a tendency to withdrawal. I asked the patients directly whether they had had any of these disorders as a child, and whenever possible also their relatives, and I went through all the patients' hospital records to see if they contained any pertinent information in this respect.

Thirteen men, or 43 per cent, had had some neurotic traits as a child, compared with 3 of the women, or 23 per cent. The difference was not significant. The traits most frequently mentioned were of the behavior disorder category -irritability, aggressiveness or a tendency to withdrawal -being noted in 6 of the male cases (cases 1, 3, 16, 18, 20, 23) and in 2 females (cases 33, 38). Next came nail-biting (cases 7, 11, 14, 15, 19, 23) and sleep disorders, usually associated with nightmares and night terrors (cases 3, 11, 19, 28, 43). Two patients, both women (cases 33, 43) wet their beds beyond school-entering age. Two patients were abnormally anxious and easily upset as children (cases 15, 23). 2 patients had anancasms (cases 9, 11), 1 patient stammered (case 33) and I patient had a facial tic (case 18).

To study this question from another angle, I made enquiries at the psychiatric departments and hospitals, for children and adults, in all the districts where the patients had lived. This revealed that 14 had gone to an out-patient department for child psychiatry or had been admitted to a hospital for child psychiatry (I I boys and 3 girls). In 6 cases it was because of problems associated with the transsexualism (cases -3, 5, 8, 27, 33, 38). In 3 of these the transsexuals had gone of their own accord to child psychiatrists, either because they knew them, or because they knew that these physicians had had experience with transsexualism. Thus the other I I had been taken to these institutions by their parents, or through the child welfare boards because of some kind of behavior disorder. This percentage, 29, agrees well with the percentage for mental disorder reckoned from the transsexuals' own accounts-37 per cent.

Only I case of mental trouble during childhood was uncovered by going through the registers of these institutions (case 37) which was not already known about from the accounts of the transsexuals or their relatives. It is true that these registers corroborated only 38 of the 43 transsexuals who said that they had had mental trouble before the age of 15, but there was no reason not to be1ieve the other 5.

Mental and physical disease in parents and sibs

Enquiries were made at all the psychiatric departments and hospitals in the districts in which the parents of the patients had lived, to see if they had ever been admitted for mental disorder. Information concerning mental disease among the sibs was gathered from the relatives of the patients, the patients themselves or the patients'

hospital records. The same applied to information regarding physical disease among parents and sibs. The parents of 4 patients born outside Sweden were excluded, and also those of a 5th patient, for no reliable information could be obtained in this case. All in all, this analysis covered the 76 parents of 38 patients, and their 119 sibs born of the same mother.

This search revealed the following: Case 3: mother admitted to psychiatric department and mental hospital for puerperal psychosis and severe anancasms. Case 7: mother mentally retarded (IQ unknown), sister had IQ of 66, and brother an IQ of 58-70 and a mental age of 9 (Point-Scale). Case 24: sister hospitalized under the diagnosis of postinfectious psychosis. Case 27: mother had been in a psychiatric department and mental hospital for a "neurotic depressive reaction". Case 29: mother had a mental age of 7.2 years (Point-Scale) and had consulted the out-patient services of a psychiatric department and a mental hospital. One brother had an IQ of 54 and one sister an IQ of 44. Case 30: father had stayed at a mental hospital for an endogenous mental depression. Case 31: a sister was backward (IQ unknown) and had attended a special class at school. The only physical abnormalities of note among the mothers, fathers and sibs were epilepsy in one brother (case 21) and one sister (case 29) and an EEG of epileptic type and behavior disorder in one brother (case 29), all confirmed by hospital records.

Thus two parents and 5 sibs were retarded. In addition the mother in case 23 gave me the impression on personal examination of being backward, but only mildly so; her IQ was not measured. But only in cases 7 and 29 did relatives have an IQ below about 70. According to Akesson (1961) about 2 per cent of the Swedish population have IQ's below this level. Thus normally about 4 of the relatives of my patients should have been so retarded. The number found-5-does not differ significantly from this. If one only takes into account parents, however, there was only I parent with an IQ below 70 and, even if one considers the other mentally retarded parent, whose IQ was unknown, to have an IQ below 70, it gives only 2 parents with IQ's below this level, which can hardly be said to point to any over-representation of mental deficiency among parents. No family member included in this analysis showed any signs of transsexualism or any other sexual deviation.

In 4 cases (cases 7, 23, 29, 31) the patients and other members of their family had neurologic or mental disorders that might have had a common basis. In case 7 both the mother and sibs were retarded and the patient had a cerebrolesional syndrome and an abnormal EEG. The mother in case 23 was slightly retarded and showed signs of a cerebrolesional syndrome, and the son had an IQ of 81, and psychiatric signs of brain damage. In case 29, the mother and 2 sibs were retarded, I of the 2 sibs had frank epilepsy, and the patient had an IQ of 72 and an abnormal EEG. A sister in case 31 was slightly retarded, and the patient herself had an IQ of 84 and an abnormal EEG. It is not unlikely that brain damage lay behind all the disorders in these cases-the mental retardation, the cerebrolesional syndromes, the epilepsy and the abnormal EEG's. The possibility of a genetic factor in these 4 cases cannot be excluded.

Parental age and birth order

If a disease is caused mainly by genetic factors the victims should not differ from healthy persons in parental age at birth or in birth order. Information regarding paternal age, maternal age and birth order was forthcoming in 38, 39 and 39 of the present cases, respectively. It was lacking for 4 patients born outside Sweden, and the paternal age was not known in I of the other cases. The parental ages were compared with the ages of all Swedish mothers and fathers getting children the same years the patients were born. The figures were as follows:

Maternal age	Transsexuals	Controls
-20	3.2	1
20-25	9	9.2
25-30	12	11.1
30-35	7	8.8
35-40	7	5.5
40-45	1	2.1
45-	-	0.2

The mean maternal age was 28.8 years in the present series against 29.3 years in the control series. The difference is not significant.

Paternal age	Transsexuals	Controls
-25	6	3.3
25-30	8	9.4
30-35	10	10.4
35-40	7	7.7
40-45	5	4.4
45-	2	2.8

The mean paternal age was 33.0 in the present series, against 33.8 years in the control series. The difference is not significant.

The figures for birth rank were as follows:

	Number of affected patients by rank												
Size of sibship	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Expected no. each ran**
1	(5)												
2	6	5											5.50
3	4	2	-										2.00
4	1	-	-	3									1.00
5	1	-	-	-	3								0.80
6	-	-	-	2	-	-							0.33
7	-	-	1	-	-	-	-						0.14
8	-	-	-	-	-	-	-	1					0.13
9	-	-	-	-	-	1	1	-	-				0.22
10	1	-	-	-	-	-	-	-	-	1			0.20
11	-	-	-	-	1	-	-	-	-	-	-		0.09
12	-	-	-	-	-	-	-	-	-	-	-	-	-
Observed total	13	7	1	5	4	1	1	1	-	1	-	-	34.0
Expected total	10.41	10.41	4.91	2.91	1.91	1.11	0.78	0.64	0.51	0.29	0.09	-	34.0

As seen from the table, the 39 patients were randomly distributed by birth rank. The difference between the observed and expected figures was not significant.

Thirteen patients were first-born and 13 last-born. These figures do not differ significantly from the number which could be expected - 10.4.

Thus neither the maternal age, nor the paternal age differed significantly from that in an average Swedish population. Nor did the patients differ significantly from the expected in birth order

Family background

As transsexualism is often blamed on circumstances in childhood (see e.g. Lukianowicz, 1959a), such as the loss of a parent through death or divorce, I compared the transsexuals with a series of controls for various social data. Five had to be excluded from this analysis, 3 men (cases 6, 14, 26) and 2 women (cases 41, 43), 4 of them because they were born in a foreign country, and I because she was added too late to the series to get all the information needed for this analysis.

For controls, I asked at the parishes for the names of the two same-sexed persons born directly before each transsexual in the same parish, and also of the two born directly after. The first three subjects in order in the lists sent me I took as controls. If one had died, the fourth one was substituted. I then assembled the data I needed for the following analysis about the controls and their parents from the same sources as I tapped for the transsexuals.
Parents' social standing. The parents were divided into three social groups, as is the practice in Sweden; the norms for these groups are described in the Official Statistics of Sweden (Government election statistics for 1937-1940). If the child was adopted, the adoptive father's social group was noted. If it was illegitimate and not legitimized before the age of 4, the mother's social group was noted.

Eight per cent, or 3, of the transsexuals were born in social group 1; 34 per cent, or 13, in group 11; and 58 per cent, or 22, in group 111. The corresponding figures for the control group were 4 per cent (5), 23 per cent (26) and 73 per cent (83). Thus there was no significant difference between the groups in social standing.

Frequency of only children and sex of sibs. Thirteen per cent (5/38) of the transsexuals were only children, and 16 per cent of the controls (18/114). The difference is not statistically significant.

The male transsexuals had 35 sisters and 43 brothers and the male controls-three times the number of the transsexuals -had 109 sisters and 90 brothers. The female transsexuals had 25 sisters and 16 brothers, and the female controls 38 sisters and 39 brothers. Combining the sexes, the transsexuals had 60 sisters and 59 brothers, and the controls 147 sisters and 129 brothers. There is no significant difference here, either between the female and male transsexuals, or between the transsexuals and controls, either divided or not divided by sex. Parental loss through parental death, divorce or illegitimacy. The figures for parental loss were as follows:

	Transsexuals (N=38)		**Controls (N= 114)**	
	No.	**%**	**No.**	**%**
Parents divorced before subject was 15	8	21	9	8
Parent died before subject was 15	5	13	12	11
Born illegitimate, and not legitimized later	4	11	9	8
No form of parental loss	22	58	84	74

The transsexuals did not differ significantly from the controls in any of these respects.

The parents of 2 male transsexuals died before they were 15 and the parents of 3 female transsexuals-fathers and I mother. The correponding figures for the controls were 7 and 5 - 3 mothers and 9 fathers. Though 17 transsexuals are listed under parental loss, in I case both the child was illegitimate and the mother died. Thus the actual number of cases of parental loss among the transsexuals amounted to 16, or 42 per cent (cases 3, 4, 10, 11, 12, 16, 18, 23, 27, 28, 30, 31, 34, 35, 37, 42). The corresponding figures for the controls were 30, or 26 per cent. In other words, they did not differ significantly from the controls in parental loss.

In 50 per cent of the 16 cases of parental loss among the transsexuals, the family was deprived of a parent while the child was between the ages of 0 and 3, in 31 per cent between the ages of 4 and 9, and in 19 per cent after the age of 10. The corresponding figures for the controls were 43, 30 and 27 per cent.

Social assistance. Enquiries at the social agencies in all the districts where the parents of the transsexuals and controls had lived revealed the following:

	Transsexuals (N= 38)		Controls (N= 114)	
	No.	**%**	**No.**	**%**
Parents got social assistance during two consecutive years at most	3	8	4	4
Parents got social assistance for a longer time	10	26	18	16

In neither respect did the transsexuals differ significantly from the controls.
Parents reported for drinking. Enquiries at all the local temperance councils (where all forms of drunken misconduct are registered in Sweden) regarding the parents, revealed the following number on the books of these agencies-for anything from a single instance of drunkenness to constant drunkenness and crimes committed while drunk.

	Transsexuals (N= 38)		Controls (N= 110)	
	No.	**%**	**No.**	**%**
Fathers				
Reported once for intemperance	2	5	3	3
Reported more than once for intemperance	8	21	6	5
Mothers				(N=114)
Reported once for intemperance	0	0	1	1
Reported more than once for intemperance	0	0	1	1

It was impossible to get complete data in this respect for 4 of the fathers. Otherwise the transsexuals' fathers had a significantly greater amount of complaints lodged against them for intemperance than did the fathers of the controls ($p<0.02$).

Complaints to child live rare boards about home conditions. Enquiries at all the child welfare boards revealed the following:

	Transsexuals (N= 37)		Controls (N= 112)		Signif. of diff.
	No.	**%**	**No.**	**%**	
Complaints to boards about conditions of upbringing	6	16	3	3	$p<0.01$
Placement in children's or foster home	10	27	10	9	$p<0.02$
Neither of two foregoing circumstances	26	70	101	90	$p<0.01$
Neither of two foregoing or any form of parental loss	17	46	79	71	$p<0.02$
Neither placement away from home or any form of parental loss	17	46	80	71	$p<0.01$

One transsexual had to be excluded from this breakdown because the books of the child welfare board before 1952 were not available, and 2 controls, both women, had emigrated, and it was impossible to check them in the records of the child welfare boards.

If one looks to the cases themselves, one finds that complaints were made to the child welfare board, or the child was taken away from its home, in 30 per cent (11/37) of the cases of transsexualism (cases 1, 3, 7, 27, 30, 31, 34, 36, 37, 38, 42) against 10 per cent of the control series. Here the difference is significant ($p<0.01$).

The difference is also significant ($p<0.02$) between the number of transsexuals and controls who suffered from none of the disadvantages in childhood studied. If one considers that parental death, divorce, illegitimacy and placement away from home includes all forms of parental deprivation, parental deprivation was significantly over-represented among the transsexuals ($p<0.01$).

Parents needing to consult psychiatrists about themselves. Enquiries concerning the 76 parents of the transsexuals at the psychiatric departments of general hospitals and at mental hospitals revealed that 4 had consulted a psychiatric department. One was hospitalized for endogenous depression (father in case 30) and I for a postpartum psychosis and anancasms (mother in case 3). Two mothers had sought legal permission for abortion (mothers in cases 27 and 29). The mother in case 27 had also been hospitalized under the diagnosis of "reactive neurotic-depression". The mother in case 29 had also consulted an out-patient department of a mental hospital about a disablement pension. Thus altogether 4 out of the 76 parents, I father and 3 mothers, had consulted a psychiatrist. This is no more than one would expect from a normal population.

Treatment

The following is a summary of the specific treatment given in these 43 cases:

Ten men got no specific treatment, 11 only got estrogen treatment, 5 got estrogen treatment and afterwards a conversion operation. Eight got their name changed legally, all 8 after estrogen medication and 4 in combination with a conversion operation.

Two women got no specific treatment, I woman got only androgen treatment, 8 got their breasts amputated after androgen treatment, and 9 had their name changed legally, all after treatment with androgens and 7 in combination with a removal of their breasts.

In all except 3 cases of operation or change of name too little time has elapsed to be able to say anything definite about the results. The length of follow-up for the men who had an operation or their namechanged now amounts to 20.7 months on the average (median 24.5 months) and for the women to 42.3 months (median 26.2 months). The patients themselves all said, however, that these measures had made it easier for them to adjust, made them more stable mentally, and improved their sex life. None regretted what had been done. None showed any signs of the treatment having an adverse mental effect. On the whole, the women seemed to have profited more from their treatment than the men.

All patients were given supportive psychotherapy in order to help them cope with their problems, and various measures were taken to provide a better social adjustment.

After it has been possible to follow up these patients for a longer time, I intend to give a more exhaustive report on the results of treatment.

General Discussion

Although I had no influence on the composition of the cases in my series, they did not constitute a representative sample of transsexuals. They consisted of transsexuals under such a strain because of the social or mental sequels of their anomaly that they were forced to seek medical help. What they had in common was a severe form of the anomaly, or a personality unable to cope with its social or mental consequences. Accordingly, one might say that they arc representative of transsexuals who go to a physician for help.

Because the series was selected and varied greatly in age, and came from different parts of the country, it was hard to find a control series suitable for all the variables I examined. For this reason, in the cases where I compared the transsexuals with controls, I chose controls examined the same way as the transsexuals for the variable in question and as representative as possible of the general population. It may be objected that doing this makes it impossible to draw any general conclusions, but I decided that it was best to use large, well-analyzed series from other sources for purposes of comparison for my study, whose aim was to throw light on certain variables to help provide a basis for further research. For the study of social data, I assembled my own control group.

There are no other prevalence figures calculated in the same way with which to compare mine - 1 per 37,000 men and I per 103,000 women. Otherwise Anchersen (1956) reported that he knew of 6 transsexuals in Norway's population of a little over 3 million; Hamburger et al (1953) reported 5 in Denmark's population of about 4 million; Turtle (1963) believed that there was roughly I transsexual in every 3,000 to 17,000 persons in Great Britain; and Pauly (1966) estimated from his study of the literature that I out of every 100,000 men and I out of every 400,000 women was a transsexual. My results indicate that transsexualism is more common than most of these figures indicate, both among men and women.

The male/female ratio in the series was 2.3:1. This agrees well with the ratio Randell (1959) found, but the proportion of men is lower than that given by other authors. The preponderance of men may be partly due to it being easier for women to compensate for the anomaly than men, with the result that men seek medical advice more often than women. It may also be that the ratio is affected by different attitudes to the anomaly in men and women on the part of both physicians at Ad laymen, as well as authorities. Thirdly, it is not inconceivable that there is some biologic reason for the preponderance of males among cases of transvestism/transsexualism and other forms of sexual deviation (Roth & Ball 1964).

My series of transsexuals did not differ much from the general population in external features, except for I case in which there was reason to suspect an endocrine disorder. Some of the patients showed an abnormal distribution of pubic hair, but so do subjects in the general population (Dupertius, Atkinson & Elftman, 1945). One of my male patients had no beard and 4 had only a sparse one, but these men, who had passed through puberty at a normal age (about 15), were mostly still too young at the time they were examined to be able to say for sure that they were abnormal in this respect.

There was I case of gynecomastia, but gynecomastia is not unusual at the age this patient was. On the other hand, the patient's urine contained an abnormally high content of pregnanediol and his transsexualism grew worse while the gynecomastia was developing.

Neither the men nor the women differed to any noteworthy extent from the normal in any of the body dimensions measured. True, the women often showed a larger than average biacromial breadth in proportion to the length of the radius and tibia, which to some degree bears out the observation that many female transsexuals have the

wide shoulders of the young man. But there were only 13 women in the series, and their ages were not representative of the general population.
The mental characteristics of the patients fell into three groups: ones intimately linked with the transsexualism, ones resulting from the transsexualism, and ones independent of the transsexualism, and of the kind found in any group of persons with mental troubles.

One must be careful about drawing specific conclusions about the mental characteristics before puberty. The feeling of belonging to the opposite sex apparently sets in early in life, but anomalies of behavior seem to be more prominent to begin with. It is perhaps best to say that before puberty transsexualism is characterized by an extreme form of cross-gender behavior, but not by any particularly specific features. After puberty, more specific features can be made out. These, what I consider the cardinal features of transsexualism, are: (1) a conviction that one belongs to the other sex than indicated by one's body, (2) abhorrence of one's body, especially one's genitals, (3) demands for operation to change one's anatomic sex and/or legal measures to have one's sexual status changed, and (4) a desire to be accepted by everyone as a member of the opposite sex.

The feeling or conviction of belonging to the other sex, existing both before and after puberty, is to my mind the central problem for these people, around which all their other troubles cluster. In my opinion, this is the only real primary disorder, but the three other features just listed are so intimately connected with it that I have called them cardinal. This feeling of belonging to the opposite sex corresponds to what Stoller (1964 a, b, c) called inverted core gender identity, the basis of the whole transsexual complex. It was the first subjective intimation of the anomaly in every one of my cases. To my mind, an inverted core gender identity is what mainly differentiates transsexualism from other disorders associated with cross-dressing.

In no case in the present series was the cross-dressing associated with sexual excitement or satisfaction. The women cross-dressed more than the men, the sexes differing significantly in this respect, both before and after puberty. External circumstances seemed to make more difference to the amount of cross-dressing in the case of the men than in the women. The men seemed to be more emotionally concerned about their situation than the women; they were more envious of women than the female patients were of men, and they were more persistent in their efforts to undergo a change in sex.

All this was reflected in the difference between the men and women in frequency of suicidal thoughts and a feeling of being persecuted, which were both more common in the men than in the women, though the differences were not statistically significant. Twenty per cent of the men had tried to commit suicide against 8 per cent of the women.

A group with psychiatric problems must yield a higher percentage for attempted suicide than a Population chosen at random. Nevertheless, the high rate in the present series - 16 per cent against 0. 1 per cent in Parkin & Stengel's general population -shows, even though the latter was not calculated in exactly the same way, that more attention than hitherto should be given to the risk of transsexuals committing suicide.

That the transsexuals required more -social assistance than controls is probably due, partly at least, to the great strain under which they lived on account of their anomaly, no doubt largely because it was hard for them to get work that suited them.

The great amount of sick-listing in their case can be traced to a small minority-the ones who took long sickness absences or several short ones, for surgery for example, and for which they were generally classified under mental disorder. Thus the large number of absences for "mental disorder" does not necessarily mean that the patients often got attacks of mental disorder in the ordinary sense of the term.

Most of the patients, both men and women, had sexual relations with their own sex. But only a few had had purely heterosexual or homosexual experience, the proportion between the two varying from case to case. As Kinsey et al. (1948) and others have noted, whether or not one has sexual relations with members of one's own or the other sex sometimes depends on circumstances, and even heterosexually oriented persons may become. homosexual for a while if they get into a situation where it is impossible to get a partner from the opposite sex.

Thus it is impossible to draw any conclusions about heterosexuality and homosexuality from the point of view of the kind of sexual experience the patients had had. An interesting observation in this series is that 12 patients, 8 men and 4 women, had not had any form of genital activity with either sex. Most of them said that they had never felt a desire for it. Some said that they wanted to wait until they could get their bodies changed, but closer

analysis revealed that they probably had a basically weak sexual drive. Thus 28 per cent had not had any form of sexual activity, and equally many denied having masturbated. Twenty-three per cent had a low sexual drive, as defined here, women more often than men. This is in keeping with the observation that only about 16 per cent wanted a change in sex for sexual reasons. As far as I could see, sex, as the word is usually used, did not play a prominent part in any case. Whether this was because of a low sexual drive, or because the drive was sublimated in the psychoanalytical sense, is impossible to determine from this investigation. Three observations, howeverabsence of sexual motives for the cross-dressing, in many cases below average sexual urge, and the fact that conversion operations were seldom wanted for purely sexual reasons -indicate that the sexual component is weaker than it seems to be in other kinds of sexual "aberration", such as fetishism, and simple transvestism.

As in the cases reported by other authors, none of the transsexuals in my series regarded having sexual relations with members of their own sex as homosexual. In fact, they were shocked at the idea that others thought they were homosexual. To them sexual relations with a member of their own anatomic sex were heterosexual, not homosexual. In keeping with this, the male transsexual sought the company of virile heterosexual men, and refused to have anything to do with homosexual men. Judging by the interviews I had with the male sexual partners of the men, the partners regarded them as women. Thus the terms heterosexual and homosexual acquire another meaning in connection with transsexualism than they have otherwise.

To sum up, at the time I saw the patients, they were all sexually aroused mentally by persons of their own sex. This was the most consistent sex variable found, and only to be expected, seeing that transsexuals feel that they belong to the opposite sex. The findings regarding sexual activity were not consistent, varying from case to case, and from one time to another in the same case, apparently depending largely on the circumstances in which the patients lived. About every fourth to fifth patient had only a weak sexual urge or little interest in sex, the women more often than the men. The observations indicate how important it is to distinguish between the partner used for sexual activity, and the sex exciting the subject mentally.

The personality analysis of the patients revealed an unusually high frequency of psychoinfantilism especially among the men. Skoog (1959) found this trait in only about 16 percent of patients admitted to the psychiatric department of a general hospital, against about 48 per cent in the present series. The men in my series were also probably significantly more often asthenic and hysteroid than the women. The sex ratio for asthenic and hysteroid personalities in Lindegard's (1966) normal series were the reverse to those in mine. But the men and women were more often schizothymic than in Skoog's (1959) and Jansson's (1964) series. The greater intensity of the transsexualism among the men was probably due to the greater frequency of asthenic, hysteroid and psycho-infantile traits among them.

The men seemed to suffer more from their situation than did the women. They were more insistent in their demands for a change in sex, they were more often depressed, they more often tried to commit suicide, they tired more easily, they gave way more easily under strain, and they were more maladjusted on the whole. The women more often planned their future a long way ahead, they seemed to suffer less from their situation, they were more determined to solve their problems as best they could, and they succeeded better in coming to terms with life.

The results of the personality analysis make it easier to understand the attitude of the patients when they come for consultation. If one keeps in mind how often transsexuals are psychoinfantile, it is easier to understand why they strike us as more intense, more insistent in their demands, and more helpless than patients with other disorders. This is particularly true of the men.

The frequency of both schizothymia and psychoinfantilism, also indicate that the way transsexuals behave and talk when they come to a physician do not necessarily reflect their original personality. Some of the traits they show then may partly be the result of the conflicts they have had both with their fellow-men and the authorities because of their anomaly. One might say that they suffer from "social adjustment insufficiency" in the sense of Lindegard (1962).

The transsexuals gave the opposite results to representative normal populations on the Marke-Gottfries verbal measure of masculinity-femininity. It may be objected that one cannot compare their scores on this test with the 15 year old population. But other investigations (Brown & Tolor, 1957; Lynn, 1959) have shown that one rarely changes the sex with which one identifies oneself after the age of 15, and this was borne out by Marke and Gottfries' (1966) study of 20 to 25-year-old Students. Where the 15-year-olds differed most from the older

controls was in interests, which were more masculine in the 15 year olds. In emotions the 15-year-olds w.-re more feminine. Otherwise they gave much the same results as the older subjects. The older male students probably had more feminine interests than men of similar age in other walks of life.

The subjects might be able to reckon out to a certain degree how to answer the questions in this questionnaire so as to appear masculine or feminine, and the same is true of the other verbal test used-the MF scale from the MMPI. But the aim of both these tests is to have the subjects describe themselves. They measure the answers (behavior) which the stimuli (questions) provoke. Thus, in this respect the patients behaved quite differently from normal subjects.

As to the nonverbal tests used, it has been suggested that they measure unconscious rather than conscious identity, and Lynn (1959) concluded that the Draw a Person Test, for example, was a measure of sexual role identification. The male and female transsexuals did not differ significantly in their results on the Frank Drawing Completion Test, though they both gave results contrary to those of normal members of their sex. Nevertheless, the results from the transsexuals give the impression that, if the series had been larger, a significant difference would have emerged between the sexes.

Many factors may affect the results on the Draw a Person Test-for instance, the sex of the examiner, the way the instructions are given, what the subjects are thinking of when they are drawing, and what associations take place-and there is also the problem of choice of object versus identification. But the results from earlier research indicate that, normally, both men and women tend to draw a person of their own sex first, especially men. The transsexuals showed a decided inclination to draw a person of the opposite sex first. Otherwise the same was true of the transsexual series as of normal series, that more women than men drew the opposite sex first.

In view of the technical difficulties connected with hormonal analysis and the uncertainty as to what is normal or abnormal at various ages (e.g., Diczfalusy, 1960), one must not attach too much significance to values obtained, especially when as in the present series they were based on single tests, not serial testing. The only cases worth discussing are: case 3, because of the suspiciously high value for total gonadotropins together with suspiciously high estrogen fractions; case 6, because of the high level of pregnanediol excreted; and case 30, because of the high level of estrogens excreted. All three patients said that they had not taken any form of hormones or other drugs. It was not possible to make any follow-up analyses in these cases. But, all in all, the hormone analyses in this series did not point distinctly to transsexualism being associated with abnormalities in the forms of steroid metabolism studied.

According to Frey and his co-workers, a low alpha frequency in the EEG is common among subjects with mild mental disorders of external origin (Frey, 1946; Frey & Steinwall, 1953; Forssman & Frey, 1953; Frey & Sjbgren, 1959; Frey, 1961). But the present series showed no tendency to a low alpha frequency. Nor were the abnormal EEG findings consistent from case to case.

Judging from figures for normal series, there was an unusually high incidence of rhythmic low-frequency activity in the posterior leads in the present series (Aird & Gastaut, 1959; Peters6n & S6rbye, 1962; Selld6n, 1964); this abnormality was noted in 5 cases (4, 7, 15, 19, 29). But figures from series with different disorders with which this can be compared are lacking.

Twelve of the 42 transsexuals in the present series examined electroencephalographically had abnormal EEG's, and 14 out of the 42 similarly examined cases in my literature series. Together, this gives 26 abnormal records out of 84, or almost one-third. Thus, both separately and combined, the two series had an unusually high number of abnormal EEG's, judging by figures from normal series (Selld&n, 1964). In view of this, and the over-representation of epilepsy in my literature series of 207 transvestites/transsexuals, further research on this question is now in progress at our institute.

No evidence of an intersex state was forthcoming from the study of the sex chromatin pattern and karyotype. This agrees with the observations in other large series (Burchard, 1963; Benjamin, 1964c; Ball, 1966).

Combining my cases with all those I could find in the literature gives 199 male and 42 female cases in which the sex chromatin or karyotype was examined; 10 of the 199 men had positive sex chromatin, and all 42 women were normal in this respect. Except for 2 cases (Money & Pollitt, 1964), all 10 men were from single case reports. Obviously cases in which the sex chromatin did not agree with the phenotype would be more apt to be reported than ones in which it did. Hambert's (1966) series of 75 men with positive sex chromatin contained no

instance of transvestism or transsexualism. Nor did Lindsten (1963) find any case in a series of Turner subjects (49 cases between 16 and 30 years of age) or Hampson (1965) find any in 13 other Turner subjects. But before one can say what these negative findings signify, one must know how often transsexualism occurs in cases of chromosomal deviation, and this remains to be discovered.

Judging by the information received, none of the mothers of the 43 transsexuals had shown any form of abnormality during pregnancy. In 2 of the 28 cases of hospital delivery, the amniotic fluid was discolored. Two of the subjects born at home were of twin birth (bi-ovular). Otherwise the deliveries were apparently normal. In other words, 39 of the deliveries, or 91 per cent, were uncomplicated in the usual sense of the term; 26 of the 28 hospital deliveries that could be checked in hospital records, or 93 per cent, were uncomplicated. The corresponding figure for Roth & Ball's series (1964) was 94 per cent.

The 43 subjects apparently showed nothing out of the way during the first two weeks of life. The abnormalities noted later, during the first three years of life, may or may not have involved a cerebral lesion-it is hard to tell. In case 1, in which there was reason to suspect an endocrine disorder, the findings may all point to early brain damage. The same is true of the severe scarlet fever and slowness in learning in case 29. But the familial occurrence of mental retardation and epilepsy in this case could also point to a hereditary disposition. After the age of 3, only 3 of the histories contained events of particular interest to this study: the head injury followed by epilepsy in case 25; the onset of the transsexualism at adult age a few years after a severe head injury in case 15, and the juvenile diabetes and frequent attacks of coma in case 16. The 5, at least six cases, all male, had a history of circumstances which might have affected cerebral functioning (cases 1, 13, 15, 16, 17, 25). Of these, case 15 is particularly interesting from the point of view of etiology. All in all, however, the possibility of coincidence in these 6 cases cannot be excluded. The observations seem to indicate, nevertheless, that one should pay more attention than has been done hitherto to the subject's physical state in early childhood.

Forty-three per cent of the men and 23 per cent of the women had shown at least one neurotic trait during childhood - against about 77 per cent of Roth & Ball's male transsexuals. Six men (cases 3, 11, 15, 18, 19, 23), or 20 per cent, had shown two or more of these traits and 2 of the women (cases 33, 43), or about 15 per cent. The figures do not appear to differ much from those in children in general. For example, Jonsson & Kälvesten's (1964) figure for nail-biting in 222 Stockholm boys was 21 per cent, and for sleep disorders 15 per cent as against 20 and 13 per cent respectively in the present male series. Most authors are cautious about drawing any conclusions about the significance of neurotic traits in childhood. These symptoms are often only superficial and disappear after a time. Both cases of persistent bed-wetting were girls, while this was not mentioned in any of the male cases; it is generally the other way about. Thus, according to Hallgren (1957), 13 per cent of boys wet their beds at night against 9 per cent of girls; from his figures one would expect about 4 bed-wetters among the boys in my series and only I among the girls, instead of none and 2, respectively.

Jonsson & Kälvesten (1964) found that 25 per cent of a group of normal city boys needed some kind of help or guidance from child psychiatrists. Altogether 29 per cent of the patients in the present series had been taken to a psychiatrist either by their parents or on the initiative of the child welfare boards. This is a surprisingly low percentage considering that the feeling of belonging to the opposite sex which most of the transsexuals had already as a small child must cause a great deal of mental conflict, especially during adolescence. Thus the present study does not point to any particular amount of nonspecific behavior disorder or nervous disease in the early life of transsexuals.

It appeared from the analysis of the family background that the transsexuals more often grew up in an insecure and unstable environment than did the control series with which they were compared. Thus many more complaints had been made to the authorities about the way they were being brought up, and many more of their fathers had been reported to the officials for repeated drunken misconduct. Fifty-four per cent of the transsexuals, significantly more than in the control group, had suffered from some form of parental deprivation in their youth, if by parental deprivation is meant death or divorce of the parents before the subject was 15, placement away from home and illegitimacy. The corresponding figure for the 207 cases I analyzed from the literature was 37 per cent. These figures agree well considering that the figures for illegitimacy and placement away from home were probably higher in the literature cases than shown by their case histories -11 per cent of the transsexuals had a history of illegitimacy, against 4 per cent of

the other cases. The corresponding figures for placement away from home were 27 and 7 respectively. Others report higher figures for parental deprivation (e.g., Roth & Ball, 1964) but this is probably because they analyzed their cases in different ways and used different operational definitions.

It may be assumed that losing a parent at an early age affects a child's sexual identification and other factors in psychosexual development. The only reliable figures one can get for the onset of parental deprivation are for parental death, divorce and illegitimate birth. Half the subjects in the present 16 cases of parental deprivation were deprived of their parents in these ways before they were 3, and the other half after they were 3. The corresponding figures for the controls were 43 and 57 per cent. Consequently it is impossible to draw any general conclusions on the significance of the onset of parental deprivation from these cases.

Lack of opportunity for proper sexual identification, because of the same-sexed parent being away from home most of the time the child was growing up has been suggested as causing transsexualism (e.g., Lukianowicz, 1959a). But there was little evidence to support this theory in the histories of the present cases.

Psychoanalytically inclined researchers assume that cross-dressing is a way of mitigating castration anxiety (and thus exclude the possibility of a female transsexual) but most of my male patients wanted to have their gonads and penis removed. Moreover, after they undergo sexchanging surgery, many patients become more stable and have fewer attacks of anxiety and depression. Thus it is hard to understand how castration anxiety could lead to the development of transsexualism.

The significance of parental rejection, which some authors believe is the cause, is hard to judge from my series. In the 19 cases in which it was possible to interview the relatives, they said nothing indicating that the parents had wanted a child of the opposite sex. Three patients said that their parents had said so now and then, but it was impossible to interview these parents. In no case had the parents deliberately dressed their children in the clothes of the opposite sex. Thus my series did not support the theory of "psychologic conditioning" of this-nature.

As many as 46 per cent of the transsexuals had been brought up in an apparently normal atmosphere. This would indicate that some cases of transsexualism at least must stem from other factors than those connected with the family background.

Several authors have suggested that transsexualism is of organic origin, that it is due to genetic, hormonal or cerebrolesional mechanisms. Data pointing to an organic factor in my series were: (1) The large number of abnormal EEG's. Epilepsy was over-represented in the cases I collected from the literature, and I of the 43 transsexuals in my own series was epileptic and another got a grand mal attack during photostimulation. I have already reported (Walinder, 1965) that cerebrolesional factors have been noted in cases of different kinds of sexual aberration. (2) In I of the present cases the transsexualism started some years after a severe head injury, no signs of d6iation being observed before; in this case the transsexualism disappeared on anticonvulsant medication (given because of an abnormal EEG) and reappeared when the medication was stopped. (3) The familial occurrence in 4 cases of mental retardation, cerebrolesional signs and abnormal EEG's, pointing to the possibility of a hereditary disorder in cerebral functioning. (4) Definite evidence of an early cerebral lesion in I case (case 1) and the possibility of such in case 16. Adding together these cases gives 15, or about 35 per cent, with evidence of an organic disorder (cases 1, 4, 7, 12, 13, 15, 16, 19, 23, 25, 29, 31, 33, 38, 42).

It is unlikely that the same mechanism lies back of every case of transsexualism. On the other hand, disorders in cerebral functioning may cause a wide variety of mental disorders, the kind probably depending on the site of the injury, and the age at which it occurs. In view of NS, and the usually early onset of transsexualism, the injury must occur early in life if transsexualism is of organic origin. One can influence the sexual behavior of animals by giving hormones prenatally (e.g., Young, 1961, 1963; Young, et al., 1965). My study of prenatal and perinatal factors, however, did not reveal any circumstances of note.

Of particular interest when discussing the possibility of an organic factor are the cases in which treatment of a hormonal disorder (Routier et al., 1964) or treatment of cerebrolesional disorders (e.g., Hunter et al., 1963) eliminated or lessened the intensity of the transsexualism" transvestism. My case 15 is another example. In all these 3 cases the symptoms were reversible and, in my case at least, they began later than in most cases. In the majority of cases, however, the transsexualism begins early in life and does not respond -to treatment. The consistency from case to case is compatible with some form of organic disposition.

My investigation has shown that it is hardly possible to attribute transsexualism to only psychologic or only organic causes. Circumstances pointing to organic origin were present in some cases, and circumstances pointing to environmental origin were present in others. It is reasonable to assume that the two kinds of factors

interact, that environmental factors in the wide sense shape and determine how the transsexualism develops, and that some unfavorable external factors precipitate the transsexualism, or turn what was only a disposition to transsexualism into a permanent, fixed form of the anomaly. It is also possible that psychologic factors affect the fixity of the transsexualism, and help to make it irreversible after puberty.

Whether people are psychosexually neutral at birth, and their psycho-sexuality is determined through imprinting during childhood, is a question which cannot be answered by a retrospective study like the present one. But even if this is true, it does not gainsay the possibility of interaction between nature and nurture. Sometimes the environmental factors are most prominent, as when the child is brought up to feel as though it belonged to the opposite sex (e.g., Money et al., 1957; Hampson & Hampson, 1961; Hampson, 1965); sometimes constitutional factors are most prominent (e.g., Stoller, 1965; Barton & Ware, 1966). To repeat, however, none of my patients had been brought up as though they belonged to the opposite sex.

Both homosexuals and transvestites may show signs of cross-gender behavior in early years (e.g., Sturup, 1956; Green, 1966), but they identify themselves with their own anatomic sex. One of the most interesting tasks for further research in this field is to follow the development of children characterized by cross-gender behavior. Transsexualism seems to make greater inroads on personality than transvestism, for instance. If one can find factors positively correlated with the feeling of belonging to the opposite sex, it should be easier to determine the causes of transsexualism.

Transsexualism is a separate disease entity, at least in the great majority of cases, and it is manifested early in life. In my opinion, it is best described as a syndrome with three essential characteristics: a conviction of belonging to the opposite sex, disgust at the signs of one's anatomic sex, and the desire for a change in sex. These factors are specific of transsexualism, and because of them it is not difficult to delimit,transsexualism from other forms of sexual aberration.

Jan Wålinder

TRANSSEXUALISM
A STUDY OF FORTY-THREE CASES

Summary

An attempt was made to penetrate the nature of transsexualism by attacking the problem from several different angles. First the literature on transvestism. and transsexualism was reviewed. Transvestism was included as many authors believe that the two conditions overlap, and many do not distinguish transsexualism. from transvestism, though transvestism. may be a component of several abnormal conditions.

Next, an analysis was made of 207 cases of transvestism/transsexualism from the literature, mostly taken from single case reports, as only a few series over 10 have been reported. This revealed: (1) that about 90 per cent of the subjects began showing signs of cross-gender behavior before the age of 15; (2) that they were apparently distributed along the normal curve of intelligence; (3) that about 37 per cent had suffered from. some form of parental deprivation in youth; (4) that in about 27 per cent of the cases the parents had dressed them in clothes of the opposite sex when they were children, or had wanted a child of the opposite sex; (5) that in about 6 per cent other members of the family had cross-dressed; (6) that between 10 and 15 per cent of the men showed some form of abnormality in their morphologic sex attributes; (7) that about 33 per cent of the EEG's were abnormal, and that epilepsy was over-represented in comparison with the general population.

Analysis was also made of 43 personally examined transsexuals, 30 men and 13 women, all over 15 years old, and none showing any signs of psychosis when they were interviewed. Data on the subjects were collected from personal interviews and clinical and laboratory examinations, from their relatives, from hospital records concerning their birth and illnesses for which they had been hospitalized, from the records of child welfare bureaus, social welfare bureaus, temperance boards, state insurance offices, and every form of psychiatric institution in the districts in which the subjects had lived. This revealed the following:

In all except three cases, the subjects became conscious of their transsexual feelings before they reached the age of 15 years. The men first consulted a physician about their anomaly at a mean age of 24.5 years and the women at a mean age of 22.5 years.

Neither the men nor the women differed much from the general population in physical characteristics, including morphologic signs of sex. A few of the women had the wide shoulders and narrow hips of the young man, but on the whole they did not differ from the normal in any of the body dimensions measured.

Cross-dressing was not a consistent feature and was never done for sexual excitation or satisfaction. More women than men cross-dressed, both before and after puberty.

As children, 72 per cent of the transsexuals had preferred to play with members of the other sex, 74 per cent had acted like and played the games of the other sex, and 56 per cent had been embarrassed when they had to undress in front of members of their own sex.

As adults, all were disgusted by the morphologic and other signs of their sex, were convinced that they really belonged to the other sex, and wanted an operation to make their bodies took like that of the opposite sex or to be re-registered officially as belonging to the opposite sex.

Many had attacks of depression, and 16 per cent had attempted to commit suicide. About 37 per cent showed mental signs of a cerebrolesional syndrome. A probably significantly greater number of them than of the controls had needed social assistance for more than two years and they were more often sick-listed than the controls. A larger percentage of them were antisocial than the controls, but the difference was not statistically significant.

Fifty-three per cent of the men and 61 per cent of the women had had chiefly or only homosexual contacts, and 20 and 8 per cent chiefly or only heterosexual contacts; the rest claimed to have had no sexual activity at all.

Ninety-three per cent of the men and all the women were, and had always been, sexually aroused mentally only by members of their own sex. About every fourth to fifth patient had only a weak sexual urge, or little interest in sex on -the whole.

The men were more often hysteroid and asthenic than the women, and also more often psychoinfantile, the last trait occuring much more often among these transsexuals than in series of other nature. Schizothymia was also over-represented among the transsexuals.

The men and women showed the reverse relationship in their scores on verbal and nonverbal tests of masculinity-femininity to that shown by normal men and women.

The transsexuals did not differ from the general population in IQ distribution or mean.
No convincing evidence was found of a disorder in steroid metabolism.
About 28 per cent had abnormal EEG's, one patient had epilepsy, and another got a grand mal seizure on photic Stimulation and may also have suffered from attacks of petit mal.
All the patients had a normal sex chromatin pattern.
All were apparently normally delivered.

Their histories from childhood mention a number of nonspecific signs and symptoms that might have meant involvement of the central nervous system, but they did not allow any definite conclusions on this. In one case the transsexualism developed after a severe cerebral concussion at adult age.

The transsexuals did not show more than the usual amount of nervous disease in childhood. The parents of the transsexuals showed no more than the average amount of mental and physical disease. No other members of their families had shown any signs of transsexualism or any other form of sex deviation. In 4 cases there was reason to suspect a genetic background for a number of nonspecific signs of cerebral lesion. Significantly more of them than of the controls had suffered from parental deprivation before the age of 15 and had had their homes reported to the child welfare bureaus as unsuitable for children, and probably significantly more of them had fathers who had been repeatedly reported for drunken misconduct.

Half the transsexuals deprived of their parents through death, divorce of illegitimacy suffered this loss before the age of 3, and the other half after the age of 3. The same was true of the controls, In 3 cases it was said that the parents might have wanted a child of the opposite sex, but no clear proof was forthcoming of psychologic conditioning in early childhood.

The transsexuals did not differ from controls in their parents' social standing or in parental age and they were randomly distributed by birth rank. It was estimated that not less than I out of every 40,000 males is a transsexual and I out of every 100,000 females.

Conclusions

(1) Transsexualism is a separate disease entity, at least in the great majority of cases.
(2) Its three essential characteristics are (a) a conviction of belonging to the other sex, (b) abhorrence of the sex attributes given by nature, (c) and an overwhelming longing for a "change in sex". These features are specific of the anomaly, and make it easy to distinguish from other forms of sexual aberration.
(3) Transsexualism is more common than generally assumed.
(4) More attention than hitherto should be paid to the risk of transsexuals committing suicide.
(5) Sex, in the usual sense of the term, does not play a prominent part in transsexualism.
(6) The most consistent variable in the sex history of transsexuals is that they are mentally aroused only by members of their own anatomic sex.
(7) Many transsexuals have a psychoinfantile personality.
(8) More attention than hitherto should be paid to the possibility of brain damage.

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Case Reports

Many events in the lives of the patients which would have given a more living and colorful picture had to be left out of the following histories because of the danger of outsiders being able to identify them. All negative findings except those that are relevant are omitted.

Male

- Case 01 to Case 10.
- Case 11 to Case 20.
- Case 21. to Case 30.

Female

- Case 31 to Case 42.

Case Reports - Male

CASE 1.

Male. One younger brother, Mother, said to have had St. Vitus' dance as a girl, had been married once before she married the patient's father at 30; the father was an aggressive man, and the conditions in the patient's home were reported several times to the child welfare authorities, and he was put in foster-homes on several occasions.

He was born in hospital, weighing 3050 g; the amniotic fluid was discolored. At 14 months he was hospitalized under the diagnosis of hydrocephalus (had tonsillitis at time) and examination showed: nystagmus; pale optic discs; reduced vision; no testes palpable. At 13 he began getting hormones for the cryptorchidism. At 15 he was operated for bilateral cryptorchidism and atrophy of testes. He kept on taking androgens until the time of the present study. At 17-18 his voice broke and hair began growing on his Pubes. He had never had any erection or ejaculation.

He was an irritable child, quick-tempered and lacking in self-control; his parents took him to a child psychiatrist for this. After leaving school with good marks he attended commercial college and afterwards did mostly office-work. At 29, he began studying again for a higher degree.

He said that he had felt insecure as a child, that he hated his domineering father and was warmly attached to his kinder and more understanding mother.

As a boy he played mostly with girls; people teased him for being a sissy; he was embarrassed about his own body. At 12, he began to feel uncertain about his sex role; he felt as if he were "neutral"; after a time he began to feel as if he belonged to the opposite sex, and this feeling grew stronger shortly before he entered puberty, at which time he also began to be disgusted at the sight of his own body. At 26 he began to have periods of gradually mounting desire to cross-dress, ending in continual crossdressing for a time. He was erotically aroused by men and had a few homosexual contacts; he never showed any interest in girls. He had a weak libido, and said that he had never masturbated. He tried to conquer his anomaly by marrying, but this only made matters worse; he got frequent attacks of depression and at 26 was admitted to a psychiatric department, but after five years of supportive psychotherapy, he was no better. He wanted to have his name changed and to be operated on.
Examination at 29 revealed: Psychoinfantile, asthenic, hysteroid and syntonic traits; cerebrolesional symptoms; tendency to depression; IQ 123. Dysplastic build; kyphoscoliosis; bilateral nystagmus; reduced vision in left eye;

shrunken penis; small scrotum and no palpable testes; no prostate; masculine pubic hair; sparse axillary hair; no beard; hormones: slightly low FSH value; BMR-23 per cent; EEG normal.

CASE 2.

Male. One younger sister. The father drank a little too much, but on the whole the family atmosphere was pleasant. The patient was born in hospital, weighing 3650 g. At about 10 he was said to have got concussion, but he was not hospitalized, and he had no postconcussional disorders. At 28 he was operated on for phimosis, and thyroid treatment was started for hypothyroidism; he stopped taking the drugs of his own accord and showed no signs of hypornetabolism at the time of consultation.

He took a university degree and advanced to a high social standing.

He said that he had felt insecure as a child; his father was colorless and submissive, and his mother domineering; he did not prefer one to the other.

Up to the age of 10 he was like an ordinary boy, and good at gymnastics. At 10 he began to get a feeling of belonging to the opposite sex; the feeling grew stronger with time and became combined with aversion for his own body, and he finally determined to have an operation done. He plucked out the hairs on his face. To begin with he was erotically aroused by the opposite sex, but in the end only by members of his own sex. He married twice and had children in both marriages; his first marriage broke up because of his anomaly and he did not enjoy sexual intercourse with his second wife either. He became more and more attracted to men, and finally could not even bear the idea of having sexual intercourse with women. His masturbatory fantasies were of males, and had a slightly masochistic coloring. He cross-dressed now and then until about 19, when the desire to do so began coming on in periods, He had several attacks of depression and had attempted to commit suicide.

Examination at 31 revealed: Formal, cultured manner; syntonic, hysteroid, schizothymic personality; tendency to depression, IQ 125. Normal build; normal pubic and axillary hair; normal penis and testes; normal beard; normal hormone titers; normal EEG.

CASE 3.

Male. One sister and one younger half-sister. Parents divorced when patient was 9, and father remarried. Mother often hospitalized in psychiatric institutions for anancastic syndrome; she had asked for a legal abortion when she was expecting the patient, but was refused; she got a psychotic reaction after delivering the patient, and was hospitalized. Because of the mother's ill-health the patient often stayed in foster-homes.

He was born in hospital, weighing 3920 g. At 17 he had a short spell of concussion.

His parents consulted a child psychiatrist because of his behavior and sleep disorders. He got average marks at school, and went on to an agricultural school. Afterwards he worked as a postman and a factory hand. He said that his father was strict and authoritative and his mother gentle and submissive; he did not prefer one to the other.

As a boy he played mostly with girls and at girls' games. He was embarrassed when he had to undress for gymnastics at school. He began to feel as if he belonged to the opposite sex when he was very young-before puberty. After entering puberty at 13-14, he began also to be disgusted at the sight of his own genitals and to want to have them removed. He was sexually attracted to boys, and never interested in girls. He had a weak libido, and no sexual experience up to the time of consultation. His masturbatory fantasies were of males, He started cross-dressing during puberty, and did so more and more with time, but never continuously. He urinated in the female position. He was often depressed and often contemplated suicide.

Examination at 19 revealed: Syntonic and psychoinfantile personality; IQ 105. Leptosomatic build; sparse axillary hair and feminine pubic hair; too little facial hair to need shaving; normal penis, testicles and prostate; hormone analysis, suspiciously high total gonadotropins and fractionated estrogens for age; normal EEG.

CASE 4.

Male. Two -older brothers and one older sister. Parents quarrelled; father drank and committed suicide when the patient was 9. One uncle was an alcoholic addict. Three cousins on father's side committed suicide. The patient was born at home. He went through secondary school and has since done various kinds of qualified work. He was strongly attached to his mother as a child.

At 10 he began to feel that he belonged to the opposite sex and to be repelled by the male characteristics of his body. At about the same time he began to cross-dress now and then. People often called him "Miss" when he was young. At 40 he changed over completely to being a "woman". He was erotically stimulated by men, and liked men as sex partners. He had a strong sexual urge and wanted sex-changing surgery chiefly for sexual reasons. He had several attacks of depression when he contemplated suicide. When he was refused a conversion operation, he got ideas of persecution.

At 37 he was put on estrogens.

Examination at 40 revealed: Hysteroid, syntonic, schizothymic, psychoinfantile personality; tendency to ideas of persecution; IQ 122. Normal build; estrogen-induced gynecomastia; little beard because of electrocoagulation; normal pubic and axillary hair; normal penis, testicles and prostate; no data forthcoming on previous hormone analysis; abnormal EEG.

At 43, he got plastic breast implants, and a conversion operation. Since then he has been more stable and is more content with life.

CASE 5.

Male. One younger sister, Mother, who had migraine, died when the patient was 27. The father drank and caused trouble in the home.

The patient was born at home. At 10 he began having migraine. He had several attacks of kidney stones. After finishing school with average marks, he went from one job to another, running errands, in shops, in restaurants and in factories. During the six months before he came to us, he had worked as a "housewife" for another man, doing no outside work.

He did not think that either of his parents had been particularly dominant, though his father got very aggressive when he drank. He felt nothing at all for his father, but was strongly attached to his mother.

He had felt like a girl as long as he could remember and he played with dolls when he was small. He did not mind undressing in front of others for gymnastics at school. He was often teased for being a sissy at school. He entered puberty at 13-14 and was afterwards erotically attracted to members of his own sex. He had a moderately strong sexual urge. He had frequent and satisfying homosexual activity, and his masturbatory fantasies were of males. He was disgusted by his own male sex characteristics, and wanted a sex-changing operation. He urinated in the sitting position. At 15 he began cross-dressing periodically; at 33 he changed over completely to women's clothing. At 20, an operation was discussed but was not done, mainly because his mother was against it.

Examination at 35 revealed: Psychoinfantile, hysteroid and syntonic personality; IQ 97. Slight obesity, but normal build and heavy bones; normal penis, testicles and prostate; normal axillary, pubic and facial hair; hormone analysis at age of 20 had shown nothing abnormal; normal EEG.

At 35, estrogen treatment was begun, and with this he became more content with life, and more stable mentally.

CASE 6.

Male. One older brother. The patient was born in hospital, weighing 3550 g. He was slow in developing, both physically and mentally. He said that he had injured his back at the age of 2 and his bead at the age of 5, but that he recovered completely; this could not be confirmed. At 21, his left breast began to swell and ache, and he lost 8-10 kg in weight, and began to get attacks of stabbing pain in his epigastrium.

He stayed at a children's home for some undiscoverable reason when he was about one year old. Otherwise he had had a happy childhood on the whole. His father was slightly unstable and quick-tempered; his mother was more sensitive and warmhearted, and the patient was more attached to her.

After leaving school, where he repeated one year, he did unskilled work of various kinds, often in restaurants, where he often worked as a "woman". He had frequent attacks of depression.
He liked to dress as a girl when he was small, and his mother sometimes gave in and let him do it. He played mostly with girls. He was not embarrassed by having to undress in front of others. He became more and more envious of the clothes girls wore. At 12-13 he began to be erotically stimulated by boys. He never had heterosexual intercourse, but he had many and satisfying homosexual contacts. He said that he never masturbated but that be often had spontaneous erections combined with homosexual fantasies. At 18 he began cross-dressing periodically. He always felt confused about his sex role, though he felt more female than male; he felt more female in some periods than others, apparently even before puberty, and the contrary sex feeling grew particularly strong while the gynecomastia was developing, at which time lie also grew to abhor his own genitals and to long intensely for a sex-changing operation.

Examination at 21 revealed: Asthenic, syntonic, hysteroid and schizothymic personality; tendency to feel persecuted, cerebrolesional signs and symptoms; IQ 104. Normal build; swollen left breast; normal penis and testicles; normal axillary hair but sparse beard (had not yet shaved); hormones: abnormally high pregnanediol values on two occasions; endocrinologic analysis failed to show cause for the gynecomastia; PBI and liver function values normal; normal EEG.

CASE 7.

Male. Three older sisters, one older brother and six younger brothers. The mother was said to be backward, and the father was a criminal. One brother (IQ 58-70) and one sister (IQ 66) were in hospitals for antisocial retarded, Complaints were made to authorities about conditions in home, and the patient was put in a foster-home when he was an infant.

He was born in hospital, weighing 4200 g. He bit his nails as a child.

He got poor marks at school and had to attend special classes the last years he was there. A child psychiatrist was consulted. After leaving school, he did various odd jobs of unskilled nature, often working as a "woman". He was charged with crimes when he was 19 and 24, and underwent psychiatric examination on the order or the court; mental abnormality of nonpsychotic nature was diagnosed.

He said that he had felt insecure as a child-that he had no one to lean on. He felt like a girl from the beginning, and played girls' games when he was a child. He was embarrassed whenever he had to undress in front of others, and he abhorred his genitals from the time he was very young, and at 15 this got worse. He began cross-dressing as a young boy, and two years before consultation he changed over to wearing women's clothing continually. He was erotically attracted to men, had male partners for most of his sexual activity, and imagined himself in the female role when he masturbated. He had a strong libido. After his second sentence at 24 he did not come into conflict with the law again.

Examination at 27 revealed: Hysteroid, syntonic, psychoinfantile, asthenic personality; cerebrolesional symptoms; IQ 96. Normal build; normal penis, testicles and prostate; shaved legs and pubic hair to give feminine appearance; normal axillary and facial hair; low total gonadotropin level for age; abnormal EEG.

At 27 he received estrogens and at 28 he got his name changed. It was easier for him to adjust afterwards, but he still longed for a conversion operation.

CASE 8.

Male. Two younger sisters and one younger brother. The patient was born in a private nursing-home, weighing 3560 g. At 2, he was suspected to have poliomyelitis as his legs seemed to be paralyzed, but he was apparently not hospitalized for this.

As a child he sometimes had nightmares. Around puberty he began to bite his nails.

His father was strict and dictatorial; his mother was tolerant, understanding and yielding, and the patient was more attached to her.

After leaving school with average marks, he took a year's course in office-work. At 18 he started studying at a painting academy.

Ever since lie could remember he felt as if he were a girl, but he played equally often with both sexes when he was small. He was poor at gymnastics and felt embarrassed when he had to undress in front of boys. He entered puberty at 13 and afterwards his feeling of belonging to the other sex got stronger, and his body began to feel unpleasant; it felt foreign, as if his mind and body did not agree. He was erotically attracted to boys, never to girls. At the time of consultation, at 18, he had not had any sexual experience. When he masturbated he imagined himself as a female. He had a moderate libido. At about puberty he began cross-dressing at times. He longed for sex-changing surgery. He complained that he felt under intense strain, and that he had had repeated attacks of depression when he contemplated suicide.

Examination at 18 revealed: Quiet, shy young man with an asthenic and slightly psychoinfantile personality; slight depression; IQ 96. Normal build; normal pubic and axillary hair but shaving only necessary every other day; normal penis, testicles and prostate; normal hormone values; normal EEG.

CASE 9.

Male. One older sister. Cousin on father's side said to be retarded. Maternal aunt had been in mental hospital for "nervousness".

The patient was born in hospital, weighing 3860 g. He had eczema and asthma up to the age of 10. At 11, he began to suffer from anancasms, which were said to begin after high fever following vaccination for smallpox. He took a university degree, and now worked as a civil servant.

His father was the dominant member of the family. He did not particularly prefer one parent to the other. He had a happy childhood. He played only with boys and boys' games. He felt ernbarrassed during gymnastics-always had the feeling that he was different from others. At about 12, his body began to feel foreign and he began to cross-dress now and then. At 21, he began to cross-dress more, but only when he was not working; at the same time he began to shave his pubic hair to make it look feminine. His feeling of belonging to the other sex grew and grew, and was firmly entrenched at the time of consultation. He had tried to castrate himself, and had frequent attacks of depression combined with thoughts of suicide. He had had no sexual experience. He was mentally stimulated by his own sex. He had a weak libido. His masturbatory fantasies were of men. At 30 he went to a psychiatric department asking for recommendation for castration, and it was decided to put him on estrogens.

Examination at 33 revealed: Asthenic, syntonic, schizothymic, psychoinfantile personality; clear reactive depression; cerebrolesional syndrome; anancasms; IQ 106. Estrogen-induced gynecomastia; small atrophic testicles; small prostate; sparse facial hair; male pubic hair; normal axillary hair; before estrogen treatment started, genitals and hormone values said to be normal; normal EEG.

CASE 10.

Male. One older sister. Parents divorced when patient 8, the father being appointed guardian for the patient and the mother for the girl. The father remarried when the patient was 15.

He was born in hospital, weighing 3600 g. After leaving school, where he repeated one year, he worked in factories and offices and was apparently a good worker. He was once reported for drunken misconduct. At 24 he married, and now has two children, but his marriage is not happy on account of his transsexualism.

He said that he had had a normal childhood, that neither of his parents was dominant, and that he did not prefer one to the other.

As far back as he could remember he had wanted to be a female, and the feeling of belonging to the other sex grew and grew, and became even more intense during puberty, when he became revolted at the signs he showed of belonging to the male sex, especially his genitals. He was always mentally aroused by his own sex,

but he had not had any homosexual activity. He had a weak libido, and said that he had never masturbated. He began to cross-dress now and then when he was a child, and at 28 he changed to women's clothing every evening when he got home. He had many attacks of depression and often thought of suicide. He longed for a conversion operation.

Examination at 34 revealed: A cool and detached man, asthenic traits, clearly depressed; IQ 88. Ordinary build; female pubic hair; normal axillary and facial hair; normal penis, testicles and prostate; low gonadotropin value for age; normal EEG.

CASE 11.

Male. Only child. Parents divorced when patient was 2. Mother, who remarried when he was 13, was said to be nervous and to drink too much. No data forthcoming on father.

The patient was born in hospital, weighing 3650 g. He bit his nails and had nightmares when he was small and during puberty he began suffering from anancasms. At 12 he had tonsillitis, and an organic heart defect was discovered. At 15 he had acute pericarditis, but had no more heart trouble afterwards. At 16 his personality changed: he began to keep to himself, brood, and have attacks of anxiety. A child psychiatrist was consulted and he was hospitalized with the diagnosis of transvestism (schizophrenia?). He stayed several times at a mental hospital after this, the diagnosis there being "character disorder (transvestism)". The last time was when he was 23.

After finishing school, where he got good marks, he worked in offices and factories. He was considered a good worker, but from the age of 20 on he only took temporary jobs.

He said that he had not felt secure as a child, that he never got on well with his domineering stepfather. Nor did he care much for his mother, whom he said was nervous and unstable.

Until puberty at the age of 16 he was normally interested in girls, though not in a sexual sense, he said. After this he began to become more and more convinced that he belonged to the opposite sex, and eventually he came to hate his own genitals. At the same time lie also became sexually attracted to men, and from then on he was mainly interested in the male sex. He had a strong sexual libido, but said that he had never had any sexual activity. He masturbated often, and then imagined himself in the female role. At 16 his breasts began to ache, and he thought that they began to swell as well. He shaved all the hair off his body, and rubbed himself all over with hormone ointments. At 20, he began to long to be castrated. He cross-dressed periodically from the age of 16 on. He was often depressed and often threatened to commit suicide. He also threatened to castrate himself.

Between 21 and 23 he received supportive psychotherapy. At 23, estrogen treatment was started, but he was dissatisfied with the result and demanded sex-changing surgery.

Examination at 23 revealed: Psychoinfantile, asthenic, syntonic, hysteroid and schizothyrnic personality; ideas of persecution; cerebrolesional syndrome; no signs of psychosis; IQ 108. Normal build; estrogen-induced bilateral gynecomastia; normal penis, testicles and prostate; pubic hair shaved off; axillary and facial hair normal; EEG normal; roentgenograms of skull showed suggestion of hyperostosis frontalis interna.

CASE 12.

Male. Born out of wedlock and never legitimized. Two older half-sisters and half-brothers, all well. The patient was born in hospital, weighing 3850 g.

Neither his mother nor stepfather was dominant, and he liked them equally well. After leaving school, where he repeated his second year, lie did various kinds of work, and is presently working as a "female" shop assistant.

He always preferred girls' games and was embarrassed when others saw his body in the gymnastics lessons. From the time he was small, he felt that he belonged to the opposite sex, and this grew worse when he entered puberty at 14. He was often mistaken for a girl when he was young. He was erotically attracted to males. He never had any heterosexual intercourse, but had frequent and satisfying homosexual relations. He masturbated without any accompanying fantasies. He had a moderately strong libido. At 17 he began to cross-dress now and

then, and at 23 he changed over to wearing feminine clothing all the time. He wanted a sex-changing operation and to have his name changed. At 22 he began getting estrogens.

Examination at 22 revealed: A mild, gentle man with a hysteroid, asthenic, psychoinfantile personality; IQ 81. Normal build; normal penis, testicles, prostate; normal pubic and axillary hair, but shaving only necessary once a week: normal hormone values; EEG abnormal.

***CASE 13*.**

Male. One older brother. Whole family alive and well. The patient was born in hospital, weighing 3000 g; the amniotic fluid was discolored. At the age of 2 he had concussion and was hospitalized for a short time. At 7 he was again hospitalized for concussion and a small cranial fracture; afterwards speech disorders developed. At 18 he was operated on for a gastric ulcer. At 21, diabetes mellitus was discovered.
After leaving school he did various kinds of work, first as a male, but at 21 he began working as a female. He said that he had had a happy childhood. His father was the dominant parent; he was more attached to his warm-hearted mother.

As long as he could remember he had felt as if he were a girl. He played girls' games when he was a child. He was embarrassed when he had to undress in front of his schoolmates. He entered puberty at about 15, and then became disgusted at the sight of his body. He was mentally aroused by the male sex, and had chiefly homosexual contacts. A few attempts at heterosexual intercourse were all a failure. He imagined himself in the female role while he was masturbating. He had a moderate libido. He began cross-dressing during puberty, first only occasionally, but at 19 he began wearing women's clothes all the time, and eventually he adopted a completely feminine role, both at home and at work.

He had several periods of mental trouble when he grew up, but none very profound or long-lasting. Examination at 21 revealed: Good balance and good insight; hysteroid and syntonic traits; IQ 96. Normal build; slight paralysis of left abducens nerve; normal penis, testicles and prostate, and male pubic hair; shaved armpits; needed to shave every other day; abnormal EEG.

At 21 estrogen treatment was started and at 23 he got his name changed. This made it possible for him to get better and more permanent work, and he became more stable mentally.

***CASE 14*.**

Male. The patient was illegitimate and never saw his father. His mother, said to have been 42 when he was born, had three girls in an earlier marriage, two of whom died for some unknown reason; she herself died at 57 for an unknown reason.

The patient said that he was born at home. At 24 he had lung tuberculosis, and was discharged from hospital recovered after one year. He bit his nails as a boy.

After finishing school, where he was an average pupil, he first worked in factories, and then in restaurants, where he had worked as a woman during recent years.

When he was small he liked to play girls' games, and to associate with girls. He felt like a girl, and it was extremely hard for him to undress in front of boys at school. While he was going to school, he began to sit down to urinate. From his very earliest years he hated his genitals, At 12 he entered puberty and with this his feeling of belonging to the opposite sex increased. He was erotically attracted to the male sex, and had several homosexual relationships. He had a moderately strong libido and said that he never masturbated. He started cross-dressing now and then when he was a child and continued doing so until he was 28 when he began wearing women's clothing all the time. He was periodically depressed, and had once attempted to take his life. He longed for a conversion operation and a change of name, and at 30 the operation was done.

Examination at 27 revealed: Hysteroid, syntonic, psychoinfantile personality; cerebrolesional syndrome; tendency to depression; normal intelligence (IQ not measured because of linguistic difficulties). Athletic build; penis, testicles and prostate normal; inale pubic, axillary and facial hair; normal EEG.

CASE 15.

Male. One older sister, two older and two younger brothers. The patient was born at home. At 12 he hit his head, but did not faint. At 17 he apparently had poliomyelitis but he was not hospitalized and the disorder disappeared without a trace. At 18 he fell while ski-jumping and lost consciousness for a long time; no skull fracture could be seen. The next year he fell again ski-jumping, and dislocated his shoulder and broke off some of his teeth. He had many attacks of gastritis, kidney stones, and prostatitis.

As a child lie was anxious and easily upset, and he bit his nails so much that his parents sent him to a child psychiatrist. He got average marks at school. After finishing there and doing his military service, he first worked for a time in the forests, and finally became a truck-driver. He said that lie had been brought up in a happy home atmosphere on the whole. His father was slightly more dominating than his mother, but he did not prefer one parent more than the other.

Up to the age of 22-23 he developed normally and had normal and satisfying sexual relations with women. In his 23rd year he began to feel that he was being transformed into a woman, and started dressing in women's clothes now and then. At 24 he married, and lie was very fond of his wife, with whom he had two children, but she gradually lost her sexual attraction for him. His feeling of belonging to the other sex grew and grew, and lie began to shave his pubic hair and to do other things to make himself took like a woman, and he cross-dressed more and more often. At 29 his wife threatened to leave him. He consulted a doctor who advised him to consult us at the mental hospital, and we admitted him. It was found that he had an abnormal EEG, and as an experiment he was given phenantoin, without any suggestion being used; three weeks later his transsexualism vanished. The drug had to be stopped because of its side effects, and with this the transsexualism reappeared. Other anticonvulsants tried also had to be stopped because of side effects. At 30 the patient was a full-fledged transsexual, his wife divorced him and he started making plans to adopt a female role entirely. According to his last report to us, when he was 31, the transsexualism had diminished for a time but was now back in full force, and he felt he could no longer go on working as a man.

Examination at 29 revealed: Hysteroid, asthenic personality; tendency to ideas of persecution; cerebrolesional syndrome; IQ 104-110 (measured during military service). Normal build; normal penis, testicles and prostate; pubic hair shaved to look female; eyebrows and facial hair plucked; hormone values normal; EEG abnormal.

CASE 16.

Male. Only child. Parents divorced when patient was 4. Mother, who Temarried, was said to have Basedow's disease. The patient was born in hospital, weighing 3480 g. He was a "delicate child". Diabetes mellitus was discovered when he was 3 and beginning with his early years he had many attacks of coma. He had ichthyosis from the time he was young.

After finishing his compulsory school training he went to a trade school, and afterwards did various kinds of work, mainly in restaurants. He was aggressive, irritable and maladjusted as a boy, and was taken to a department for child psychiatry on two occasions, when he was 14 and 17, where the diagnosis both times was "puberty neurosis and diabetes mellitus".

He said that he had felt insecure as a child, that his domineering step-father did not understand him, and that he preferred his more submissive mother.

He was apparently not interested in the clothes of the opposite sex when he was a boy, and he was not embarrassed during gymnastic lessons. But already at 6 or 7 he began to feel that he was not fitted to play a masculine role. Shortly before puberty he began to feel intensely that he really belonged to the opposite sex, and to become more and more repelled by his own body. He had occasional heterosexual contacts when he was young, but he was always erotically attracted to his own sex. He got engaged twice in attempt to be like other men, but both times it was a failure. He had a moderate libido. He masturbated without any specific form of fantasies. He began to cross-dress periodically when he was a boy, and at 23 he changed over to wearing women's clothing all the time. He had many attacks of depression and had attempted to commit suicide. The last few years he had had an overwhelming desire for conversion surgery and a change of name. Examination at 24 revealed: Good verbal ability; hysteroid, asthenic, schizothymic, psychoinfantile personality; cerebrolesional syndrome; IQ 104. Normal build; ichthyosis; normal penis, testicles and prostate; male pubic, axillary and facial hair; low total gonadotropin value for age; abnormal EEG.

CASE 17.

Male. One younger brother and one sister. Mother "delicate" and "nervous" though she never consulted a physician for it. The patient was born in hospital, weighing 2400 g. At 9 he broke his thigh-bone in a traffic accident, and suffered from concussion and confusion for about two days afterwards. At 14 he began having bronchial asthma. At 25 he was examined for dizziness, and an EEG taken was normal.

After finishing school he went to a commercial college and was now a salesman. He said that he had not got the tenderness he longed for as a child. His mother was the dominant member of the family, and he liked his father better.

He said that he had heard his mother say that she had wanted a girl instead of him, but this was not verified, and he was not reared like a girl. As a boy he preferred girls' games. Beginning at about the age of 4, he started to feel that he belonged to the opposite sex, and he was considered to be a sissy at school. At 14, when he entered puberty, the contrary sex feeling grew more intense and he began to detest his own body, especially his genitals. He began periodical cross-dressing at about the age of 25, and at about the same time began shaving his legs and his pubic hair to make himself look feminine, and also to have his beard removed by electrolysis. He had occasional heterosexual contacts, but they had not given him any satisfaction. He was erotically aroused by men, but he had not had any homosexual contacts. He had a moderately strong libido. He had frequent attacks of depression, and was prepared to give up everything for a conversion operation and change of name.

Estrogen treatment, started when he was 31 made him calm down a little, but only for a time.

Examination at 34 revealed: Hysteroid, asthenic, schizothymic, psychoinfantile personality; cerebrolesional syndrome; IQ 103. Slight obesity; heavy bone structure; male pubic and axillary hair; normal penis, testicles and prostate; normal EEG.

CASE 18.

Male. Only child. The father, who drank, left home shortly after his son was born, and died three years later. The patient was born in hospital, weighing 3220 g. He was prone to infection as a small child. At 4 he began having facial tics, which gradually disappeared. At 10, when he was examined for a defect in the frontal bone, the EEG showed a focus, but this had gone in a record taken later.

He kept to himself as a child. After finishing school, where he was an average pupil, he did various kinds of work. He said that he had had a happy childhood on the whole. He was greatly attached to his mother. From early childhood on, he felt that he was really a girl. He played girls' games, and his schoolmates called him "girlie". He was extremely embarrased whenever he bad to dress and undress in front of his schoolmates. After puberty, at 14, he began to abhor his own body, especially his genitals. He was sexually attracted to males, and had occasional homosexual contacts, but never any heterosexual relationships. He masturbated but said he had no masturbatory fantasies. He had a moderate libido. He often had attacks of depression. Beginning at the age of 15, he cross-dressed every time he got the chance and at 20 he changed over to wearing women's clothing all the time. From then on he was consumed by a desire for a conversion operation and a change of name. Examination at 22 revealed: A quiet, modest and gentle manner; hysteroid, asthenic, Syntonic traits; IQ 94. Normal build; slender bones; normal penis, testicles and prostate; male pubic, axillary and facial hair; hormones normal; EEG normal.

At 23, after a period of estrogen medication, a conversion operation was performed. At 24 he got his name changed and breast implants. The results so far have been very satisfactory. He is much happier and more stable than he used to be.

CASE 19.

Male. The patient, an only child, was born in hospital, weighing 3200 g. At 7 he had polyserositis which healed without complication. As a child he suffered from night terrors and nightmares. At 5 he began biting his nails. He was an average pupil, and after finishing school went into office work.

He felt insecure as a child because his parents quarrelled a great deal. His father was the dominant parent. He was very fond of his mother.

He always felt like a girl when he was small, and he played girls' games. At 7 the contrary sex feeling grew stronger and he began to dislike the sight of his own body, and disliked it still more, especially his genitals, after he entered puberty at 15. He was erotically attracted to men, and never had any heterosexual contacts, but several homosexual relationships. He had a moderate libido. His masturbatory fantasies were of males.

Beginning as a schoolboy, he began to cross-dress now and then. At 19-20 be began to feel an intense desire for a conversion operation; every sign of his male anatomic sex became abhorrent. He bad several attacks of depression when he contemplated suicide.

Examination at 20 revealed: Shy andreserved manner; asthenic syntonic and psychoinfantile personality; slight depression; IQ 87. Normal build; normal penis, testicles, and prostate; male pubic, axillary and facial hair; low total gonadotropin value for age; abnormal EEG. At 22 he began taking estrogens. The result has been greater mental stability and less tendency to depression.

CASE 20.

Male. Three older brothers, one younger brother and sister. Whole family said to be "nervous", but none had been hospitalized for it. The patient was born in hospital, weighing 2710 g. As a child he tended to keep to himself, and was shy and reserved, and a child psychiatrist was consulted.
After finishing school lie worked in restaurants, from the age of 24 on as a "woman". He said that lie had had an unhappy childhood mostly because of his aggressive, domineering father. He preferred his mother, who was more submissive.

As a child he always felt like a girl. He was embarrassed at having to undress for gymnastics. fie had little to do with other boys, and was called a sissy. When he entered puberty at 15, lie began to abhor his body, especially his genitals, and he envied the way the bodies of his female playmates were developing. At this age he also became firmly convinced that he belonged to the opposite sex. He was attracted erotically only to males. After one unsuccessful attempt at heterosexual intercourse, he had only homosexual contacts, which always satisfied him. His masturbatory fantasies were of males. He had a moderate libido. Beginning as a boy, he crossdressed now and then, and at 24 he changed over to wearing women's clothing all the time. He wanted to have a conversion operation and a change of name. At 24 estrogen treatment was begun, but he has not yet noticeably improved.

Examination at 24 revealed: A shy, vague, evasive man with asthenic and syntonic traits; IQ 96. Normal build, normal penis, testicles and prostate; normal male pubic, axillary and facial hair; hormone titers normal; normal EEG.

CASE 21.

Male. Three older brothers and one younger sister. Father had gone through a period of excessive drinking. One brother epileptic. The patient was born in hospital, weighing 3300 g. At 10 he got concussion but he was apparently not hospitalized. At about the same age he had a short spell of albuminuria.

After leaving school, where he was an average pupil, he worked in restaurants for the most part, as a "woman" from the age of 24 on. Apparently because of the difficulties his anomaly caused him, he started drinking too much and to take too much of various forms of drugs. He stole, and after a few suspended sentences, was exempted from legal punishment. He was admitted several times to a mental hospital.

He thought that his childhood had been a happy one on the whole. His father was the dominant parent, and he preferred his mother.

From as far back as lie could remember he was convinced that he was a female. He preferred girls' games and to play with girls. He gradually began to dislike his own body, and began to do so even more when he entered puberty at 14-15. He -crossdressed now and then from the time he was a boy until he was 24, when he changed over to wearing women's clothing all the time. He was erotically attracted to men, and had only homosexual activity. His masturbatory fantasies were of males. He had a strong libido. He often had attacks of depression and thought of suicide.

Examination at 26 revealed: Hysteroid and syntonic traits; tendency to feel persecuted; IQ 94. Normal build;

normal penis, testicles and prostate; normal pubic, axillary and facial hair; normal EEG. At 28 he had a conversion operation, after a period of estrogen medication, and the same year he got his name changed. After this he appeared to become better adjusted and to show less inclination to crime. He himself felt more at peace with the world and said that he did not become depressed so often as before.

CASE 22.

Male. One older brother and one younger sister. Parents happily married. One maternal uncle committed suicide, and another was treated at a psychiatric institution for transient "nervous trouble." The patient was born in hospital, weighing 4080 g. Apart from a slight attack of rickets, his early physical history was normal. He took a university degree and worked as a teacher.

He said his father was slightly more dominant than his mother, who was more warm-hearted and to whom he was much more attached.

As a child he always played girls' games, and he had felt like a girl ever since he could remember. He did not act like other boys and he was embarrassed when he had to change clothes for gymnastics. He got more and more the feeling that he was "born in the wrong sex". At 14-15, when he entered puberty, he began to abhor his own genitals, and to long to have them operated upon so that he would look female. When he became conscious of his sexual urge, he was attracted to males, never to females, He had frequent homosexual contacts, which satisfied him immensely, and never any heterosexual intercourse. His masturbatory fantasies were of males. He had a moderate libido. He was often depressed and thought of suicide, but never attempted to take his life. Because of his social position he had never been able to cross-dress.

Examination at 33 revealed: An extremely frank, accessible and intelligent man, with good insight; hysteroid, syntonic traits; IQ 121. Normal build; normal penis, testicles and prostate; normal pubic and axillary hair; slightly sparse beard (partly plucked out); normal hormone titers; normal EEG.

CASE 23.

Male. One older sister. Parents divorced when patient was about 7. His mother, who was appointed his guardian, never remarried; she had rheumatism, and was "nervous"; she gave the impression of being slightly retarded.

The patient was born in hospital, weighing 4740 g. When he was a child he often felt worried, and had attacks of the anxiety type, and he bit his nails intensely. Because of this he was taken to a child psychiatrist. After finishing school, where he repeated one grade, he did unskilled factory work.

He said he had been unhappy as a child "because I could not be a girl". He preferred his mother to his father; neither was particularly dominant.

As far back as he could remember he felt that he was a girl. He played only girls' games, never boys'. He liked gymnastics, but thought it was hard to change in front of the other boys. At 7 he began to sit down for urinating. At this age he also began to dislike his own genitals, and this feeling grew more intense after puberty. He envied girls their bodies. He had no sexual activity, though he had a strong libido. He was erotically attracted to the male sex, and his masturbatory fantasies were of males. At 14-15 he began to cross-dress on occasion. He had repeated attacks of depression; he threatened again and again to commit suicide, and attempted to do so on at least two occasions. He tried to get a surgical change of sex and became greatly upset when this was denied him.

Examination at 19 revealed. Asthenic, hysteroid, syntonic, psychoinfantile traits; strong tendency to depression; distinct cerebro)esional syndrome; IQ 81. Normal build; heavy bones; penis, testicles and prostate normal; normal male pubic, axillary and facial hair; normal hormone titers; normal EEG.

Estrogen treatment was started when he was 19, but it is too early yet to be able to say anything about the result. He is now working as a "woman".

CASE 24.

Male. Five younger sisters and four younger brothers. His family was poor, but there was a pleasant atmosphere in the home. One sister was treated in a mental hospital under the diagnosis of postinfectious psychosis; she died from lung tuberculosis.

The patient was born at home. After finishing rural school, he went to a people's high school. He then took a job in an office, and at the same time went on with his education by taking correspondence courses. During the last few years he has been working as a civil servant.

Neither parent was more dominant than the other and he liked them equally well. He always felt like a female. When he was small he had had only feminine interests, and played mostly with girls. He was poor at gymnastics, but not particularly embarrassed when he had to undress in front of the other boys. At 14 he entered puberty and afterwards felt himself strongly attracted to boys. He had many homosexual contacts, which he enjoyed immensely. He once tried heterosexual intercourse but it was a failure. He had a moderate libido, and his masturbatory fantasies were of males. His feeling of belonging to the other sex became more and more accentuated after puberty, and at 25 he began to long to have a "sex-changing" operation. He never cross-dressed because of his social position and because he was afraid of getting into trouble, but he had often longed to do so. He had never said anything to a doctor about his troubles until he came to us.

Examination at 49 revealed: Asthenic, syntonic, schizothymic, psychoinfantile traits; average intelligence (IQ not measured). Normal build; normal penis, testicles and prostate; normal pubic, axillary and facial hair; normal EEG; low but not definitely abnormal total gonadotropin values for age.

CASE 25.

Male. Besides a twin brother, apparently bi-ovular, he had four older brothers, two older sisters and two younger brothers. One paternal uncle was said to have had epilepsy and one sister had a son who was treated for a short time in a mental hospital, apparently for a depressive reaction.

The patient was born at home. At 8 he fainted in an accident, and afterwards suffered from headache, dizziness and difficulty in concentrating. At 14 he began to have attacks of epilepsy, mostly of the grand mal type. At 37 he was operated on for prognathism.

After finishing school he first worked in factories but from the age of 23 on he cooked in a restaurant. At 38 he was treated three times in a mental hospital for mental confusion, once after heavy drinking; he was given the diagnosis of alcoholic psychosis and possibly epileptic psychosis. It was noted that he had convulsions when he was in hospital; he was put on phenantoin and then got fewer attacks. It seems that whenever he did not take enough of this medicine, he became confused again. Several routine EEG's were taken, but they were always normal.

He said that neither of his parents was particularly dominant. He preferred his mother. As a child he always felt like a girt. He played girls' games and was embarrassed when he had to undress in front of boys. After puberty at about 15, he became erotically attracted to boys, and his homosexual preference grew more and more pronounced. He had heterosexual contacts but none had satisfied him. He had only a few homosexual contacts, however, and his libido was classed as weak. He masturbated occasionally, but without any particular type of fantasies. After puberty he began to abhor his own body, particularly his genitals, and to become more and more convinced that he belonged to the other sex. After puberty he also began crossdressing now and then. He longed for a conversion operation, but was afraid that this was impossible because of his age and his work and other social factors.

Examination at 42 revealed: Psychoinfantile, asthenic, hysteroid traits; tendency to feel persecuted; distinct cerebrolesional syndrome; IQ 72. Dysplastic build; penis, testes and prostate normal; normal axillary hair but female type of pubic hair and so little facial hair that he only needed to shave once a week; normal EEG.

CASE 26.

Male. The patient was illegitimate and lived sometimes with his mother, sometimes with his mother's parents and sometimes in children's homes. His mother remarried when he was 12. He had no siblings.

He did not know whether he had been born at home or in hospital. He had many attacks of pneumonia as a child, though he apparently was never very sick. After leaving school he worked in factories and in restaurants. He said that he had grown up with a feeling that he did not belong anywhere.

He had heard that this mother had wanted him to be a girl, but this could not be confirmed. He had never felt like a male, but always like a female. He played girls' games as a child. He was embarrassed about his own body while he was growing up, and repelled at the sight of his male characteristics. These feelings and the feeling of belonging to the other sex increased after puberty at about 13. He was erotically attracted only to men and had many homosexual contacts. He had a moderately strong libido. He imagined himself to be female when he was masturbating. As a child he cross-dressed occasionally, and at 17 he changed over completely to women's clothing. He worked as a woman. He wanted a conversion operation and a change of name.

Examination at 21 revealed: Syntonic and schizothymic traits; good insight; apparently normal intelligence, low IQ of 72 being probably due to language difficulty. Athletic build; normal penis, testicles, and prostate; pubic hair shaved to look female; axillary and facial hair normal; hormone titers normal; EEG normal.

CASE 27.

Male. One older sister. Parents divorced when patient was 3. Mother did not remarry. He was brought up away from home for long periods, sometimes at his maternal grandmother's and sometimes in children's homes. His mother had gynecologic and nervous troubles, and was treated in a mental hospital for a "neurotic-depressive reaction". She had also gone to a psychiatric department for nervous troubles and to obtain permission for a legal abortion (not for the patient).

The patient was born in hospital, weighing 3550 g. He was an average student at school, but his transsexual feelings made him unhappy there, and he played truant and ran away from home, and was taken to a department for child psychiatry. After leaving school he had several jobs, usually only staying a short time at each, and he usually worked as a "woman". He had difficulty in adjusting, and had occasionally drunk too much and taken too many drugs.

He could not remember what his father was like. He described his childhood as insecure. As a child, he always felt as if he were a girl. He played girls' games and liked to dress in his sister's clothes. He envied girls their bodies. After puberty at about 14, he became disgusted at his own body, and at his erections. At 15 he started wearing women's clothes all the time. He was erotically attracted to men, and had occasional homosexual contacts. He never had heterosexual intercourse. His libido was moderate. He imagined himself as a woman when he masturbated. After puberty, he determined to get a conversion operation and change of name. He had many periods of depression, and had been admitted to various forms of psychiatric institutions. He had attempted to commit suicide.

Examination at 18 revealed: Psychoinfantile, asthenic, hysteroid, syntonic traits; tendency to depression; IQ 96. Normal build; slender bone structure; female pubic hair; normal axillary and facial hair; normal penis, testicles and prostate; hormone titers normal; EEG normal.

At 18 he got his name changed, and estrogen treatment was started. He improved a little after this-did not get depressed so often. But he was still determined to get an operation.

CASE 28.

Male. The patient was born out of wedlock and was sent to foster-parents at the age of I I months. He got along well in his foster family. He was born in hospital, weighing 3370 g. At 7 he was said to have lost consciousness for a short while after a head injury. At 20 he fainted again after an injury during military service. After finishing school he did office work and finally started his own firm.

He was "nervous" as a child, slept badly and walked in his sleep. When he grew older, he sometimes took alcohol and drugs to excess. Neither of his foster-parents was more dominant than the other, and he liked them equally well.

As far back as he could remember he felt as if he belonged to the opposite sex. When he was small he played mostly girls' games, and he was always called a sissy. He was embarrassed during gymnastics and was

exempted from participating. At 12 he began to use lipstick and powder. He became more and more disgusted at the sight of his genitals. At 25 he consulted an endocrinologist and then began taking estrogens. Two years later he began cross-dressing, at first only now and then, but at 27 he changed over entirely to women's clothes. At the same time he began to long for sex-changing surgery, and finally became convinced that he would not be able to go on without an operation. He had many periods of depression and once attempted to commit suicide. At 37 he got his name changed.

He was erotically attracted to men and had mainly homosexual contacts. His libido was moderate. Examination at 35 revealed: Hysteroid, asthenic and syntonic personality: IQ 96. Estrogen-induced gynecomastia; atrophied testicles; normal male distribution of hair; normal EEG. Before the estrogen treatment he had a slender masculine build, and normal genitals and prostate.

CASE 29.

Male. One older brother and one sister and three younger brothers and one younger sister. Mother, one brother and one sister mentally retarded. The brother showed behavior disorders and the sister had epilepsy. Some of the father's relatives were said to be retarded. The mother had consulted psychiatrists mainly for help in social conditions.
The patient was born in hospital, weighing 3100 g. At 2 he had severe scarlet fever and his hair fell out afterwards. He was late in learning to talk, and had difficulty at school, repeating the first year. Afterwards he worked in restaurants to begin with, and then as a "female" nurse's assistant.

He said that he had had a happy childhood on the whole. His father was the dominant member of the family. He did not prefer one parent to the other. At the age of 12 at the latest, he began to feel that he belonged to the opposite sex. He was embarrassed in gymnastics, and was repelled by all the signs he showed of being a male. He began cross-dressing at 12 and at 18 he changed over completely to wearing women's clothes. He always had a weak sexual urge; he had no sexual contacts; he denied masturbating; and he was erotically attracted only to men. He started at an early age to urinate in the sitting position. He had several attacks of depression and thoughts of suicide.

Examination at 21 revealed: Psychoinfantile, asthenic, hysteroid, and syntonic traits; tendency to depression; cerebrolesional syndrome: IQ 72. Slender build; normal penis, testicles and prostate; feminine pubic hair; sparse beard of ordinary distribution; EEG abnormal.

At 23 he got his name changed, and at 24 he had a conversion operation. After this he felt better, got along better with others, and had fewer attacks of depression.

CASE 30.

Male. The patient was born as the second of twins, the other twin being a girl. In addition, he had one older brother and three sisters. His father was hospitalized for an endogenous depression. The parents divorced when the patient was about 10, and the mother afterwards remarried. Before this there had been a great deal of strife in the home; the child welfare bureau had intervened, and placed the patient in foster-homes on several occasions.

The patient was born at home. Neither of his parents was particularly dominant. He was more attached to his mother. He went to school both in Sweden and Denmark, where his mother moved when she remarried. After finishing school, he did various kinds of work on land and at sea, and lastly he began working in restaurants as a "woman".

He had felt that he belonged to the other sex as far back as he could remember. He was embarrassed at having to undress for gymnastics. His schoolmates called him by girls' names. At puberty his contrary sex feeling became accentuated and he began to despise his own body, and to want to have it operated on. He urinated in the sitting position. He was erotically attracted to men. He had occasional heterosexual contacts, but they did not satisfy him. Homosexual contacts, however, had given him complete satisfaction. He imagined himself a female when he masturbated.

Examination at 20 revealed: Hysteroid, syntonic traits; good insight; IQ I 11. Ordinary build; normal pubic and axillary hair; beard sparse, needing shaving only every other day; normal penis; testicles soft but normally sized;

prostate normal; low total gonadotropins for age and high estrogen titer, but neither value definitely abnormal; normal EEG. At 20 estrogen treatment was started.

Case Reports - Female

CASE 31.

Female. Two older brothers and one older sister. There was much strife in the home; the child welfare bureau complained to the parents; the parents divorced when the patient was 2. The mother kept the patient; she did not remarry. One sister was put in a special class at school.

The patient was born in hospital, weighing 3470 g. She had a high fever in connection with measles. She spent all her school life in a special class, and after finishing she worked for short spells at various kinds of unskilled work, mostly in factories. At 20 she received a suspended sentence of six months for car thefts and fraud. A few years later she was again found guilty of fraud and put in an institution for a period. After she came out, she went on committing various forms of minor crime.

She was strongly attached to her mother and the younger of her brothers, who apparently acted as a father-substitute. She always felt like a boy. She played boys' games. She was embarrassed during the gymnastic lessons at school. At 15, when she entered puberty, she began to abhor all the signs she showed of belonging to the female sex. She longed to get rid of her breasts and have her menstruation stopped. At first she wore clothes of neutral character, but at 18 she changed over to wearing men's clothing entirely. She had a moderate libido. She was erotically attracted to girls. She had occasional heterosexual contacts, each time when she was under the influence of alcohol, but none gave her any feeling of satisfaction. She finally had mostly homosexual contacts. She said she had never masturbated.
Examination at 22 revealed: Syntonic personality; IQ 84. Ordinary build; large hands; normal pubic and axillary hair; normal breasts; no signs of gynecologic abnormality; hormone titers normal; EEG abnormal.

After this examination she began getting androgen treatment and the same year her breasts were removed. At 24 she got her name changed. The result was better social adjustment and subjective improvement. She now lives as a man.

CASE 32.

Female. One older sister. One paternal aunt had a reactive depression for which she was hospitalized for a short time. The patient was born at home. After finishing school, she worked mainly as a man. She had had a happy childhood. She said that her parents were kind and warmhearted; she did not prefer one to the other.

As young, she always felt like a boy. She played boys' games and was embarrassed when she had to undress in front of girls. At 17 she entered puberty. Her menses, which were sparse and infrequent, were a source of torment to her, and likewise her breasts. She was erotically attracted to girls. She denied having had any sexual activity or masturbated. Her libido was moderate. From the age of 10 on, she dressed consistently in male clothing. She wanted to have her breasts removed and her name changed.

Examination at 21 revealed: Calm, balanced woman with good insight; predominantly syntonic personality; IQ 103. Normal build: normal gynecologic state; normal breasts; normal pubic and axillary hair; no hair on body otherwise; hormone titers normal; normal EEG.

At 22 she got her name changed, androgen treatment was begun and her breasts were amputated. Too short a time has elapsed to be sure about the result, but she appears to be much more contented.

CASE 33.

Female. Three older brothers, two older sisters and two younger sisters and one younger brother. Mother operated on for tuberculosis of the kidney. Father had back troubles. One paternal uncle was an alcoholic addict and committed suicide.

The patient was born in hospital, weighing 3860 g. She was irritable and aggressive as a girl, and stammered. She wet her bed. After leaving school with average marks she started doing various kinds of masculine work. She showed a slightly antisocial attitude, later interpreted as being caused by an attempt to be accepted as a male.

She said that she had had a comparatively happy childhood, and that neither of her parents was particularly dominant. She preferred her father. She always felt like a boy. She played boys' games when she was small, and was embarrassed at having to undress for gymnastics. She entered puberty at 12, and was revolted by her menses and her secondary sex characteristics, She stopped wearing female clothing at the age of 10. At 17 she was taken to a department of child psychiatry because of her transsexualism; the records from that time say that she appeared to have attacks of petit mal. She was erotically attracted to girls, Her libido was weak, and she denied having had any sexual experience. It is not certain how often she masturbated, but probably not often. At 17 androgen treatment was started. She longed intensely for a change of name and to have her breasts removed.

Examination at 18 revealed: A quiet and reticent girt, unsure of herself; great asthenia: cerebrolesional syndrome; IQ 94. Normal build; normal gynecologic state; normal breasts; normal amount of body hair; normal pubic and axillary hair; hormone titers (before hormone therapy) normal; EEG at 17 abnormal, and photostimulation produced grand mal attack: at 18, EEG still abnormal.

At 19 she had her breasts removed and application was made for a change of name. At 20 she looked much more like a man, she had become more even-tempered, and was well adjusted to life.

***CASE 34*.**

Female. The patient was born out of wedlock and she knew nothing about her real father. She had one older sister and two older brothers. Her mother died when she was 10 and she was placed in a foster-home.

She was born at home. She said she was very prone to infection when she was small, but otherwise healthy. After leaving school with average marks she worked chiefly on farms. She grew up in poor and slightly insecure circumstances, but on the whole she said that her childhood was not unhappy.

When she was a child she played mostly with boys and at boys' games. She always felt that she belonged to the opposite sex, and this feeling grew worse when she entered puberty, when she was revolted by her menses and breasts. She had not had any sexual activity either with boys or girls, but she felt more attracted erotically to girls than to boys, She said she had never masturbated and had a weak libido. She had worn neutral clothes since her early years at school and after 13-14 wore only male clothing, and she afterwards worked as a "man". She had occasional periods of depression and thoughts of suicide. She wanted an operation to make her body more masculine.

Examination at 22 revealed: Syntonic and psychoinfantile personality; tendency to depressive reactions; IQ 99. Normal build: normal gynecologic state; normal breasts; normal hair for female; normal hormone titers; normal EEG.

***CASE 35*.**

Female. Three older sisters and one older brother. Mother died when patient was 14. The patient was born in hospital (impossible to get record of delivery). After leaving school with good marks, she trained for an occupation in which she is now a "male" executive. She said that she was brought up in a happy home, that neither parent was more dominant than the other, and that she liked her father best.

As far back as she could remember she felt that she was born into the wrong sex. She played boys' games when she was small. She was not embarrassed about her body when she went to school. After puberty the feeling of belonging to the opposite sex increased, and she was disgusted at her own menstruation. She began to have frequent periods of depression. She was erotically attracted to women, and had some homosexual activity. She had a moderately strong libido. From the age of 30 on she lived as a "man".

At 31 hormone treatment was begun. At 37 her breasts were amputated, and at 43 she got her name changed. The results were excellent: she became extremely well adjusted and had no more attacks, of depression.

Examination at 42 revealed: Hysteroid, syntonic traits; good insight; IQ 112. Before androgen treatment, she was said to have had the physical characteristics of a normal woman; now after many years of taking androgens, she showed great virilism; EEG normal.

CASE 36.

Female. Two younger sisters. Father drank, and parents quarrelled often. They divorced when the patient was 16. She was sometimes placed in foster-homes when she was small. The mother was "unstable and nervous" but had not been hospitalized for this reason.
The patient was born in hospital, weighing 2950 g. At 2 months she had dyspepsia and anemia. After finishing school with average marks she did various kinds of work on farms, in factories and in offices. During the last few years she had worked as a foreman in a large factory, and was considered to be an excellent worker.

She did not think that either of her parents was particularly dominant. She was most attached to her mother as a girl. When young, she always felt like a boy. She always played boys' games and kept company with boys. She disliked gymnastics and was embarrassed at having to change in front of girls. She began menstruating at 13; she had painful menses and suffered from premenstrual tension. She was revolted by her menses and the other signs of femininity she showed. She began cross-dressing now and then at the age of 10, and at 16 changed over to male clothing completely. She was erotically attracted by girls, was never interested in boys and never had heterosexual intercourse. But she obtained full satisfaction from sexual activity with girls. She had a moderate libido. She has now been engaged to a girl for several years. She had frequent attacks of depression. At 22 she had her name changed, at 24 androgen treatment was started, and at 25 her breasts were removed. She became more adjusted to life, had fewer attacks of depression and grew more contented.

Examination at 24 (before amputation of breasts) revealed: A frank, accessible and intelligent person with a sober and realistic attitude to her problems; no distinct signs of depression at the time; predominantly syntonic personality; IQ 97. Ordinary female build; no gynecologic abnormality; normal breasts; normal pubic and axillary hair; normal hormone titers; nonnal EEG.

CASE 37.

Female. One older and one younger sister. Father died when patient was 13. Mother described as "nervous", of solitary nature, and with a tendency to paranoid ideas. The older sister died while young from some unknown cause. The child welfare bureau had complained about the conditions in the home, and the patient was put in a foster-home for a time. One maternal aunt committed suicide.

The patient was born in a cottage hospital (no record of birth obtainable). After leaving school with average marks, she did various kinds of male types of work. She said that she had had a happy childhood on the whole, except for the times her mother's peculiar nature had led to discord. She was more attached to her father.

She had heard that her parents had wanted a boy instead of her, but her parents had not reared her as a boy. When young she felt that she was a boy. She played mostly boys' games. She was embarrassed when she had to undress for gymnastics. She began to menstruate at the age of 15, and at this her feeling of belonging to the opposite sex increased, and she was revolted by all the characteristics of femininity she showed. She wore neutral clothing until she was 17, and then changed completely to male attire. She was erotically attracted to girls. She had made herself have heterosexual intercourse to see if it helped, but she had not enjoyed it. She became pregnant after one of her heterosexual relationships, and while she was pregnant, she still felt that she belonged to the other sex. She bore her child, but left it to the care of others. She had not had any homosexual contacts, and denied having masturbated. Her sexual libido was classed as weak. She had several attacks of depression.

Examination at 20 revealed: Quiet, shy manner; good insight; asthenic, syntonic and schizothymic traits; IQ 103. Slender build; no gynecologic abnormality; infantile breasts and hair around the nipples; male pubic hair; normal axillary hair; normal hormone titers; normal EEG. At 21 androgen treatment was started.

CASE 38.

Female. Only child. The parents quarrelled, probably because of the problems the patient created. The child welfare bureau intervened mostly because of the way the father treated her, and she was placed in foster-homes for a number of periods.

She was born in hospital, weighing 2915 g. The mother had previously had many spontaneous abortions, but she was not threatened with miscarriage while she was pregnant with the patient.

The patient was an irritable and aggressive child, and she was admitted to a department for child psychiatry before the age of 15 because of the difficulties she caused and because she insisted on identifying herself with the male sex. She began menstruating at 14, and in connection with this had a number of depressive and anancastic reactions.

She said that her mother was the dominant member of the family. She did not prefer either one of her parents particularly. She always felt like a boy when she was small, -that she was "born into the wrong sex". She played boys' games and with boys. She was strongly repelled by all the characteristics she showed of the female sex. After 14 she wore only male clothes. When she finished school she did various kinds of work, always as a "man". She was erotically attracted to girls, but denied having had any sexual activity with either sex, or ever having masturbated. Her sexual libido was classed as moderately strong. Her transsexualism had made it extremely hard for her to adjust, and she had frequent attacks of depression.

Examination at 23 revealed.: A rather secretive and untalkative nature, though she discussed her problems frankly; schizothymic traits; mild but distinct cerebrolesional syndrome; IQ 112. Ordinary build; normal axillary and pubic hair; no gynecologic abnormality; low total gonadotropin titer for age; abnormal EEG.
At 23 she got her name changed and androgen treatment was begun.

CASE 39.

Female. Three older brothers and four older sisters. Two sisters, twins, died shortly after birth. The mother died from thrombosis when the patient was 24. Father remarried. The patient was born at home.

After finishing school she took jobs in different forms of masculine work, and was considered a good worker. She said that she had an insecure family background because of her father's domineering and brutal treatment of his family. Her mother was submissive and warmhearted, and she was strongly attached to her.
Since as far back as she could remember she was only interested in masculine pursuits, never in anything typical of females. She was embarrassed by her body during gymnastics, and was repelled by her breasts and menstruation when she entered puberty at the age of 17. She acted like a boy, and the family called her "sonny". She was erotically attracted to women. She tried to overcome her difficulty by getting engaged, but the result was a failure., She thought that heterosexual coitus was unpleasant. After her engagement broke off, she had homosexual contacts, and was satisfied by them. She had a moderately strong libido. When she masturbated she thought of herself in the male role. She dressed in neutral clothes until about the age of 37 when she changed over to living as a "man". She had frequent attacks of depression when she contemplated suicide. Examination at 38 revealed: A frank, sensible attitude, and good insight; apparently normal intelligence, but IQ 82. Normal build; no gynecologic abnormality; pubic hair of slightly masculine distribution; no abnormal amount of hair on body; hormone titers normal; normal EEG.

At 39 androgen treatment was begun, and later the same year she had her breasts removed and her name changed. She became much more content with life afterwards, and got along well in her masculine role.

CASE 40.

Female. Six older sisters and three older brothers. Parents died when patient was adult. The patient was born at home. After leaving school she worked mainly in shops. She was extremely well adjusted. She said that she had had a happy childhood, that neither of her parents was particularly dominant, and that she liked them equally well.

As a child she liked to play boys' games. At 11 she became conscious of a feeling of belonging to the opposite sex, and this became accentuated at puberty, which she entered at about 14. She could not bear her own body.

She began cross-dressing occasionally already before puberty, otherwise wore neutral clothing when she was a girl. At 23 she changed to being a "man". She was erotically attracted to women and had homosexual contacts. She had a moderate sexual libido and her masturbatory fantasies were of females.

At 27 she started taking androgens, at 28 she had her breasts amputated, at 33 her uterus was curetted and radium implanted, and she had her name changed, and at 36 she was officially registered as a male. The results of treatment were extremely good. She was now contented with life, had a good working capacity, and was happily married.
Examination at 35 revealed; Mainly syntonic, slightly schizothyrnic personality; objective, intelligent attitude to her problem; IQ not measured. The many years of taking androgens had led to strong virilism. The EEG was not recorded.

CASE 41.

Female. Parents still living, over 80 years of age. The patient was the 4th of 6 sibs. One brother died in infancy; the rest are still living. She did not know if she was born in hospital or at home.

She did well at school and took a university degree. Though she was brought up strictly, she thought that she had had a happy childhood. Her father was the dominant member of the family and she was most attached to him.

Ever since she was a child she had felt as though she belonged to the opposite sex, and she was often taken for a boy. She began menstruating at 12-13 and was repelled both by her menses and her breasts. She responded erotically to members of her own sex. She had not had much sexual activity, and then mainly of homosexual type. She had a moderately strong sexual libido. Her masturbatory fantasies were of females. She had tried marriage, but it had ended in failure. She cross-dressed occasionally from the age of 8 on otherwise wore mostly neutral clothes. She periodically worked and lived as a man. She had had several attacks of severe depression leading to hospitalization. She wanted to have something done to make her a man, for she felt she could not go on any longer as she was- "I am a man, though I have a female body".

Examination at 45 revealed; Hysteroid, syntonic, schizothymic traits; intelligent attitude to problem (IQ not measured); slightly hypomanic at time of examination; signs of a cerebrolesional syndrome; no signs of psychosis. Thin, normal build; powerful muscles; infantile breasts; hair on sternal region; male pubic hair; normal axillary hair; no gynecologic abnormality; hormone titers normal; EEG normal.

CASE 42.

Female. Born out of wedlock and not legitimized. Two younger sisters. At age of 2 sent to foster-parents. The patient was born in hospital, weighing 3710 g. At 22 she had meningo-encephalitis from which she recovered completely.

After leaving school she took a job in a masculine occupation and was a good worker. She said that she had had a happy childhood; neither of her foster-parents was particularly dominant. She liked her foster-father best.

When small, she always felt like a boy and she did what boys did. She was repelled by her menstruation and the other feminine characteristics that developed when she entered puberty at 15. She wore neutral clothing until she was 18, when she changed over to a completely male role. She was erotically attracted to women. She had occasional heterosexual contacts when she was young. She had a moderately strong sexual libido. Her masturbatory fantasies were of females. Before treatment she had had several attacks of depression. At 30 salpingo-oophorectomy was performed and she started taking androgens.

At 31 she got her name changed. At 32 she had her breasts removed, and she was officially registered as a male. She improved greatly after this, and was now happily married. She no longer had any attacks of depression.

Examination at 38 revealed: A hysteroid and syntonic personality, and an intelligent and realistic attitude to her

problem; IQ 114. Before androgen treatment was started, she 1ad small but not infantile breasts, normal pubic and axillary hair, no abnormal amount of body hair, and normal hormone titers. At 38, her EEG was abnormal.

CASE 43.

Female. Born out of wedlock, and sent directly from hospital to foster-parents. Three older and two younger children in foster family. At 18 she was adopted.

She was born in hospital, weighing 3340 g. She wet her bed until the age of 12, and suffered from nightmares as a child. After leaving school she continued her education with a correspondence course, and she then took jobs in masculine types of work, such as in motorcar repair shops. At 16 she began to turn criminal, and during the next few years she was charged with fraud, forgery, drunken driving, and other forms of antisocial conduct. The courts ordered a psychiatric examination on two occasions, and both times it was recommended that she be given psychiatric treatment, and concluded that her criminal behavior was secondary to her wish to be accepted as a male.

The foster-mother was the dominant member of the family. The foster-father was more evasive and passive. The patient seemed to have preferred him slightly to her foster-mother.

She always felt like a boy, and played boys' games when she was small. She began cross-dressing occasionally when she was small and at about 21 she changed over completely to male clothing. She was disgusted at all the signs she showed of belonging to the female sex, and her menses, starting when she was about 14, were a source of great torment. At 16 she began to drink and take drugs, and once when she was drunk she had heterosexual intercourse and became pregnant. She married the child's father, and delivered the child, but the marriage soon broke up, and the child is now living with foster-parents. Her feeling of belonging to the opposite sex only increased while she was pregnant. She was always erotically attracted to girls, and after her divorce had only homosexual activity. She had a moderate sexual libido, and masturbated to a moderate extent, imagining herself in the male role. She had repeated attacks of depression and during one of thern she attempted to commit suicide.

At 23 she added a male name to the female names she already had. At 25 she began taking androgens, but it is too early yet to be able to tell the result. Examination at 24 revealed; Strongly hysteroid and psychoinfantile personality and cerebrolesional symptoms; IQ 100. Normal build; gynecologic condition normal; low total gonadotropins for age; normal pubic and axillary hair; normal EEG.

Appendix

Table A. Body measurements in the 43 transsexuals of the present series

Case #	Sex	Biacromial breadth	Bi-iliac breadth	Length of radius	Length of tibia
I	m	37.5	27.0	25.5	40.0
2	m	38.0	28.3	26.2	40.0
3	m	37.0	27.0	26.2	41.5
4	m	36.7	27.7	26.1	38.4
5	m	41.0	28.5	24.5	35.2
6	m	40.0	28.0	25.2	35.5
7	m	38.0	31.5	25.5	42.0
8	m	39.0	29.2	26.5	39.5
9	m	40.0	31.0	26.3	42.0
10	m	42.0	31.2	26.4	38.3
11	m	42.0	29.0	26.0	39.6
12	m	38.5	28.2	25.4	41.5
13	m	37.5	27.3	23.2	37.3
14	m	39.6	27.0	24.5	37.5
15	m	40.0	27.0	25.0	38.0
16	m	40.5	29.5	23.5	38.2
17	m	41.5	29.0	24.6	38.2
18	m	37.0	30.0	24.5	42.5
19	m	36.0	26.0	23.7	38.5
20	m	40.0	26.5	25.7	37.6
21	m	41.0	30.0	26.0	39.1
22	m	41.4	28.5	25.1	40.0
23	m	40.5	28.0	25.0	37.5
24	m	37.5	30.0	25.7	38.1
25	m	39.0	28.1	23.5	37.0
26	m	40.5	28.5	25.6	41.4
27	m	39.2	28.6	27.0	41.2
28	m	40.5	20.2	28.0	43.9

29	m	37.1	26.0	23.2	36.0
30	m	38.1	26.6	24,0	35.2
31	F	35.0	28.0	23.1	37.0
32	F	36.4	26.5	23.2	35.8
33	F	35.6	27.0	22.6	38.5
34	F	34.6	27.9	23.6	A0
35	F	37.5	28.1	23.0	35.1
36	F	34.0	27.5	22.7	31.4
37	F	34.2	26.3	22.2	34.0
38	F	37.6	28.3	23.2	34.5
39	F	36.2	26.2	23.2	35.9
40	F	36.0	2815	24.1	37.8
41	F	37.1	26,$	23.0	34.2
42	F	36.3	28.7	23.1	35.0
43	F	36.0	26.6	23.6	37.0

Table B. Hormonal data in 30 cases from the present series

Case #	Sex	Total gonadotropins MU/24 hr	FSH U/24 hr	LH U/24 hr	17-Ketosteroids mg/24 hr	17-hydroxy corticosteroids mg/24 hr	Estrogens MU/24 hr	Estrone gamma 24 hr	Estriol gamma 24 hr	Estradiol gamma 24 hr	Pregnanediol mg/24 hr
1	M	-	< 200	43	10.6	11.0	-	-	-	-	-
2	M	> 13 < 53	-	-	15.7	17.0	<10	-	-	-	1.2
3	M	-53	-	-	11.4	15.9	-	3.0	2.1	3.3	-
5	M	> 13 < 5 3	-	-	6.2	-	-	-	-	-	-
6	M	> 6.5 < 13	-	-	25.5	38.1	-	1.8 1.7	-	-	7.0 3.8
7	M	~ 6.5	-	-	14.8	14.1	-	-	-	-	
8	M	> 6.5 < 13	-	-	12.2	12.5	<10	-	-	-	
9	M	-	-	-	17.1	22.2	-	-	-	-	-
10	M	-6.5	-	-	20.1	11.8	> 10 < 50	-	-	-	-
12	M	-	-	-	9.7	-	10	-	-	-	-
15	M	> 13 < 53	-	-	12.9	18.1	> 20 < 110	-	-	-	-
16	M	< 13	-	-	14.6	9.5	> 10 < 50	-	-	-	-
18	M	> 6 < 12	-	-	6.7	8.5	< 20	-	-	-	0.5
19	M	< 6.5	-	-	13.7	12.0	~ 50	-	-	-	1.2

20	M	> 6.5 < 13	-	-	16.2	25.6	> 20 < 110	-	-	-	1.7
22	M	-	-	-	19.8	17.6	-	-	-	-	-
23	M	> 40	-	-	5.7,7.0 7.2	11.5,16.2 17.4	-	-	-	-	-
24	M	< 6.5	-	-	5.2	13.3	< 50	-	-	-	0.8
26	M	> 13 < 53	-	-	22.7	22.0	~ 10	-	-	-	-
27	M	-	-	-	12.0	12.8	-	6.2	5.9	3.0	-
30	M	< 6.5	-	-	8.0	10.2	> 10 < 50	-	-	-	-
31	F	> 13 < 53	-	-	8.2	10.2	> 20 < 110	-	-	-	-
33	F	-	-	-	2.9	5.6	-	-	-	-	-
34	F	> 53 < 96	-	-	9.8	13.8	> 10 < 50			-	
37	F	-	220	>42< 100	-	-	-	-	-	-	-
38	F	< 6.5	-	-	8.0	6.4	> 20 < 100	-	-	-	3.0
39	F	-50	-	-	5.0	8.5	-	12.6	11.4	4.5	5.5
41	F	> 13 < 55	-	-	11.9	14.4	~ 110	-	-	-	-
42	F	13	-	-	12.9	-	~ 110	-	-	-	-
43	F	< 6.5	-	-	10.4	15.4	-	-	-	-	5.8
Total no. of analyzed cases		23	2	2	29	26	17	4	3	3	9