

TURNER'S
SYNDROME

*A PSYCHIATRIC-PSYCHOLOGICAL STUDY OF 45 WOMEN
WITH TURNER's syndrome, compared with their sisters
and women with normal karyotypes, growth retardation
and primary amenorrhoea*

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Case Material

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CASE MATERIAL

Parental age as well as physical and mental disorders of parents, siblings and relatives are presented in *Tables 79 & 80* and consequently omitted in the case histories.

The purpose of the case histories has mainly been to give a short account of the mental development of the probands, especially with regard to their adjustment at home and at school, including their proficiency and their relations to other people in general.

The names given to probands and sisters are fictitious, *but case histories are not to be quoted without permission from the authors.*

Table 79
Probands
Mental and physical disorders in parents, siblings and near relatives

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
1	21	26	34	1	—	—	Maternal grandaunt, diabetes mellitus.
2	15	32	36	1	Father, psoriasis. Mother, struma.	—	Paternal grandmother, struma. Two paternal aunts, struma.
3	11	37	34	3	Mother, epilepsy as a child, depression at 43, operated for ovarian cyst.	—	Two maternal uncles, manic-depressive psychosis. Maternal grandmother, psychogenic depression.
4	14	38	30	1	Mother, rheumatic fever, struma.	—	—
5	8	19	19	1	Father, stomach ulcer.	—	Paternal uncle, osteogenesis imperfecta.
6	30	29	26	5	—	Brother, stillborn. Sister, died few hours old.	Paternal uncle, diabetes mellitus.

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
7	9	17	18	2	—	—	—
8	19	—	17	1	—	—	Paternal great-grandmother, diabetes mellitus.
9	19	23	22	3	Father, epilepsy as a child, diabetes mellitus. Mother, ovarian cyst.	Brother, stillborn.	Maternal grandmother, diabetes mellitus.
10	22	28	30	1	—	—	—
11	24	27	29	3	Father, rheumatic fever.	Brother, died a few days old.	—
12	36	27	25	3	—	?* stillborn. Sister, struma.	—
13	15	21	23	2	Father, operated for facial cysts. Mother, psoriasis.	Sister, operated for congenital hip deformity.	Maternal cousin, diabetes mellitus.
14	24	20	24	1	—	—	—
15	38	36	41	4	Mother, died from uterus cancer.	—	—
16	27	29	34	3	Father, diabetes mellitus. Mother, struma and cholelithiasis.	—	Maternal aunt, struma.
17	9	24	33	1	Father, psoriasis. Mother, bronchitis.	—	—
18	12	39	30	1	—	—	—
19	24	25	33	2	—	—	—
20	25	31	33	3	Father, rheumatic fever.	Sister, asthma.	Nephew, leucemia.
21	12	29	36	3	Mother, retina disorder.	Twin?* stillborn.	Maternal grandmother, diabetes mellitus.
22	13	31	26	1	—	—	Maternal uncle, diabetes mellitus.
23	14	26	24	3	Mother, rheumatic fever, polyarthritis and depression.	—	Paternal grandmother, Basedow's disease.
24	29	27	30	3	—	Brother, mentally retarded.	—
25	27	38	34	1	—	Sister, polyarthritis.	—

* Sex unknown.

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
26	20	22	30	1	Mother, duodenal ulcer.	—	—
27	16	27	37	3	Father, psoriasis. Mother, ovary cyst.	Brother, psoriasis. Sister, psoriasis.	Maternal grandmother, asthma. Paternal grandmother, diabetes mellitus. Maternal uncle, multiple sclerosis.
28	23	25	27	1	Father, diphtheria. Mother, uterus fibromyoma.	—	—
29	23	21	25	1	Father, diabetes mellitus.	—	Paternal grandmother, asthma.
30	27	35	32	1	Mother, psoriasis.	—	Maternal aunt, psoriasis.
31	22	24	28	1	Father, asthma and slipped disc.	—	Paternal grandfather, diabetes mellitus.
32	21	23	24	2	Father, slipped disc.	—	Maternal grandmother, diabetes mellitus.
33	16	19	20	2	Mother, struma and uterus fibromyoma.	—	Maternal grandcousin, Down's syndrome.
34	16	23	26	2	Mother, eczema.	Brother, behaviour disorder.	Maternal aunt, word-blind. Maternal grandmother, word-blind.
35	28	33	44	4	Father, died from cancer coli. Mother, rheumatic fever and polyarthritis.	Brother, stillborn.	—
36	26	33	53	2	—	—	—
37	15	24	27	1	Mother, cholelithiasis.	—	Paternal cousin, mentally retarded. Paternal grandmother and three paternal grandaunts, diabetes mellitus.
38	14	28	29	1	—	—	Maternal cousin, epilepsy. Paternal grandmother, diabetes mellitus.

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
39	18	30	34	2	-	-	-
40	24	24	29	1	Father, eczema.	-	-
41	29	36	43	2	Father, coronary occlusion.	-	Maternal aunt, Down's syndrome. Maternal cousin, congenital heart disorder. Nephew, congenital abnormalities, died a few days old.
42	26	33	43	-	-	-	-
43	12	21	33	1	Mother, hemicrania.	-	Paternal cousin, died 3 weeks old from hydrocephalus.
44	35	30	28	1	Mother, struma.	-	Paternal uncle, asthma. Paternal aunt, leucemia. Nephew, harelip and palate cleft, hydrocephalus, died a few days old.
45	19	21	31	3	Mother, stomach ulcer.	-	-

a. The 45 probands and the 19 matched sisters

*No. 1, Cecilie, a 21-year-old single correspondent with karyotype 45,X/46,X,i(Xq).
Height: 138 cm*

Cecilie grew up in a small town and is still living there. Her father is a farmer. She has a 23-year-old sister.

She was a fretful, dyspeptic baby. She suffered from cystitis, and for a time there was blood in her stools. Development during childhood was, however, normal, except for the fact that she was always small for her age.

Relations with her parents and her elder sister were always happy.

She has always been more immature than her sister and her girl friends. Until around the age of 15 she liked to sit on her mother's lap and hold her hand when they were out shopping or at the movies.

She has always been very happy, quiet, well-balanced and extrovert. She is exceedingly liked by all on account of her high spirits and her helpful, friendly disposition. She has several good friends and many acquaintances. At school she did very well; she passed her university entrance examination at the age of 19 with average results. She was especially good at foreign languages while she had some difficulties with mathematics and creative art. She is interested in, and quite good at, swimming.

Her school teachers describe Cecilie as a very clever girl who was invariably keen and diligent. She had a good, retentive memory and good reproductive ability. Her quiet and polite manner made her well liked by all her teachers. Some of the other children discriminated against her on account of her cleverness and short stature.

She reads many books. Domestic work has never interested her in the same way as her sister and mother. It was once her intention to become a librarian, but when she heard that a librarian was expected to write book-reviews, she changed her mind and decided to become a correspondent clerk in German and English. She has recently completed a three years' training course and is now seeking employment.

She has dreamed about getting a boy friend since she was 15-16. She hopes to find a boy who is not so much taller than herself.

Her greatest worry is her short stature. She hopes very much that she may become at least 145 cm tall. It is the impression of her mother that she does not worry so much about not having well-developed secondary female sexual characteristics, but she is very sad about the fact that she is obese.

She has had two to three spontaneous menstruations before she got any hormone treatment. During cyclic hormone treatment for three months at the age of 17 menstruations occurred, but the treatment was stopped because of pronounced oedema. She had moreover spontaneous menstruation two to three times at the age of 21.

She says that she has never been very nervous. Her mood is always good and stable. She has no complaints or worries, except that she is so short and obese.

Interview with the 23-year-old single sister, Bitten, six months after the examination of Cecilie

Bitten passed the school-leaving examination of a »realskole« at the age of 16. She got on well with the other children and with the teachers. She was average in her class, and she liked school. She had, however, great difficulties in history, and she tells that her sister Cecilie was excellent at history and at subjects where concentration and memory were required, but Cecilie had some difficulties in arithmetic and mathematics. She worked harder at school than Bitten.

After leaving school, Bitten was in domestic service for a year. She then served a clerical apprenticeship lasting two and a half years. and at present she is employed as a secretary in a library, an occupation she considers tedious. She has lived with a boy friend for the last one and a half years. They have their own house, they are happy together and plan to marry in a couple of years.

Bitten says that Cecilie is mentally more immature than herself; her mood is more fluctuating, and she is more sensitive. Cecilie played with dolls up to the age of 13, but she was very active as a child, she was more extrovert than Bitten, and during childhood it was easier for her to make contacts.

Cecilie has recently found employment as a clerk in a rehabilitation centre, she likes the work and gets along well with the rest of the staff, but after working hours she feels lonely as she has not yet made any friends in the city to which she moved as taking up this employment three months ago.

No. 2, Lina, a 15-year-old girl with karyotype 45,X/46,X,?i(Y)(pter→q11::q11→pter)/?del(Y)(q11). Height: 139 cm

Lina grew up in the capital and is still living there. Her father is a porter. She has a 19-year-old sister.

She did not thrive as a baby and had explosive vomitings. She was admitted to a paediatric ward when 5 weeks old. The physicians told the mother that her daughter most probably had several bowel constrictions, and that it was doubtful if she could live very long. The mother developed severe nervousness at that time from which she has never completely recovered.

At the age of 6 months she was admitted to a paediatric ward on account of a sore throat, and during her first two years she suffered from inflammation of the middle ear several times. Since then her hearing has become slightly decreased. She has tried to use a hearing-aid, but she did not like it, and she is now doing quite well by lip-reading.

From the age of 2 years she began to thrive although she suffered from periodic spells of headache with vomiting until she was operated for aortic stenosis at the age of 13. There were no changes in her physical or mental condition subsequent to the operation, except that her headache disappeared.

She is doing very well at school, being among the best in her class; her best subject is geometry, but she also likes biological subjects. Languages present difficulties as she has some trouble in spelling. She considers this to be due to her decreased hearing.

Her teachers describe her as a remarkably conscientious, hard-working and interested pupil. She works with unfailing care, and she is capable of expressing her own opinion in a sensible and mature fashion. She is respected and esteemed by other children as well as by the teachers.

She has occasionally been teased because of her low stature, but this has not bothered her, and her short stature does not bother her much. She would,

however, very much like to become at least 150 cm tall.

She has read a lot of girl's books and detective stories, usually getting through two books a week. She also likes to sew and knit and sit cosily with her parents and sister.

The mother describes her as a nice, happy and extrovert girl with very good abilities for making contacts. She previously had several girl friends; during the last year she has, however, lost them all, which according to the mother, is mainly due to the fact that the girl friends are more mature and consequently have developed other interests such as going out with boys, going to the movies or dancing while Lina still has the interests of a 10-year-old girl.

She has, however, had a boy friend for the past six months; he seems to be as immature as she is. They spend quite a lot of time together in his or her home, but they seldom go out together, and Lina says that they do not feel sexually attracted to each other.

The mother says that Lina is an affectionate girl with pronounced motherly feelings for small children. She would like to become a teacher or a nurse. The family doctor has, however, advised against this on account of her decreased hearing. She is now thinking of becoming a laboratory assistant at the medical firm where her father is a porter, but she would like to take her university entrance examination first.

The mother has already told her daughter that she will not be able to have children. She considers it less psychotraumatic to have been given this information at the present time rather than later on. Lina also knows that she must have hormone treatment to get menstruation.

Interview with the 22-year-old married sister, Hanna, three years after the examination of Lina

Hanna left school at the age of 16 from the 9th class. She had difficulties in arithmetic, she was somewhat superficial in her way of working and not nearly so hard-working and conscientious as her sister Lina. She did not like school.

Hanna says that Lina has passed the school-leaving examination of a »real-skole« with excellent results, and she is now in the second form of the grammar school, she is one of the best in her class. She is very well adjusted at school and has several good friends. She is very active in sports at school and is in the best volley ball team.

Lina was more active during childhood, probably also more aggressive than Hanna, but after the age of 16 this has changed to a certain extent so that Hanna has become the more active of the two. Lina is quieter, more diligent, conscientious and painstaking with her school work than Hanna ever was. Hanna says that as a child she tried in vain to live up to the high activity level of her sister Lina who often used to give acrobatic performances at parties and was

extremely active in all aspects.

At 16 Hanna got an apprenticeship in an office, and she has passed a commercial school examination. She enjoys her clerical employment and is on very good terms with her colleagues and superiors.

She had her first sexual experience at 17, and she has been happily married for one and a half years; sexual relations are good. Menstruation has always been irregular with intervals of up to six months. She has no children.

No. 3, Ebba, an 11-year-old girl with karyotype 45,X/46,XX. Height: 135 cm

Ebba has always lived in the capital. Her father is an editor. She has a 22-year-old brother and two sisters, 19 and 15 years old, respectively.

She regurgitated very much until she was 6 months old and was very fretful, but thrived nevertheless. From the age of 6 months she was healthy, quiet and contented. Her development was very similar to that of her siblings, but by the age of 7 she was more immature than her siblings had been at that age, and her parents decided not to send her to school till she was 8. She is doing extremely well at school, she is in the best part of her class and has no trouble with any of the subjects. She works slowly and methodically.

She gets on very well with the teachers and with the other children at school, and she has several good girl friends in school as well as outside. She is rarely teased, but it does happen that somebody mentions her low stature, which does not bother her very much, and she always answers back.

Her teachers describe her as a girl who is above her class average. Her attitude towards school work is interested and positive; she is possibly slightly dependent. Her relations with her teachers as well as with the other children are good.

She attends jazz ballet and dancing outside the school curriculum, and she plays the violin; she likes all three activities very much and is quite good at them.

Her relations with her parents and her siblings are good.

The mother says that Ebba is immature for her age. She is somewhat precocious, and she has her own definite ideas about things; she is quite stubborn.

She is an affectionate, happy and extrovert girl who easily makes contacts. She likes small children, and her mother says that Ebba has pronounced motherly feelings. She played with dolls till a couple of years ago. She reads a lot, children's books as well as detective stories.

Ebba says that she would like to become a children's nurse. She wants, however, to get her university entrance examination before she starts on her training as a nurse.

The mother says that she and her husband intend to tell Ebba about her chromosome aberration and the consequences of having Turner's syndrome when she starts asking. They have already told her that hormone treatment will

be necessary for menstruation which does not seem to have worried her very much.

Ebba says that it does not worry her very much that she is short of stature, but hopes to become at least 150 cm tall.

Interview with the 18-year-old single sister, Gurli, three years after the examination of Ebba

Gurli is in the grammar school, 2nd class, and she likes it. She is in the best part of her class. She gets on well with the teachers and with the other pupils. She is thinking of becoming a journalist like her father.

She says that her sister Ebba in many ways matured at an earlier age than her and her other siblings. Ebba has always been a very active and diligent girl, she is extrovert, happy and sensitive.

The brother has difficulties in social adjustment, he has never had stable employment. Talking about conditions during childhood, Gurli says that it seems difficult for her to recollect and describe conditions during childhood. She asks if this could be due to some repression of facts concerning unpleasant experiences due to her mother's mental illness.

No. 4, Elly, a 14-year-old girl with karyotype 45,X. Height: 143 cm

Elly has always lived in the capital. Her father is an executive. She has a 26-year-old half sister and a 12-year-old sister.

She regurgitated quite a lot during the first months of life, but she thrived nevertheless. At the age of 7 months the mother took her to the doctor on account of a slight clitoris hypertrophy as she was afraid that Elly was not a »real girl«.

The mother says that Elly developed like her two sisters. She did not, however, learn to walk till she was 2 years of age.

She is doing well at school; she is above average in her class. During the first years at school she had, however, some difficulties in making contact with the other children; this has, however, become much better, and she has had one good girl friend all the way through school. She never wanted to have many friends, she is quite satisfied with one girl friend.

Relations with the teachers have always been good, and her mother says that they like her because she is diligent and well behaved. When there are difficulties at school, and the other children criticize the teachers, she always tries to find excuses for the teachers which she presents in a precocious way.

It has occasionally happened that the other children have teased her on account of her short stature, but this has apparently not bothered her much, and there has been no teasing during the past few years.

Her teachers describe her as a good pupil. She is careful with her school work and gets good results. Both the teachers and the other children find her easy to get along with.

She has several spare time interests. She previously took lessons in playing the piano and the flute, and she also took dancing lessons until recently. She has, however, had to give up these activities because of an increasing work-load at school. In her spare time she likes to read novels, biographies and travel-books, she also likes to settle down comfortably with her family and to play with her dog or play table tennis. For a short while she went out riding together with the younger sister.

She has not had a boy friend yet, and she admits rather hesitatingly that she is not very interested in boys. She has had some difficulties making contacts with children of her own age while she has never had any difficulties in doing so with adults or with children younger than herself. She would like to have a job which has to do with children.

The mother does not consider Elly immature for her age; she is as mature as her elder sister was at the same age. She is, however, often precocious in her way of thinking and talking. She prefers the company of adults, listening to, or joining in, their discussion than that of other children. She is well informed on political and current affairs, and she has quite adult interests as far as reading is concerned. She has her own very definite ideas about many things, and she is quite stubborn. She is slow, but very careful with her work. She is a meticulous person and exacting as far as her clothes are concerned.

She was admitted to a hospital at the age of 12 on account of short stature, and the diagnosis of Turner's syndrome was made. The parents have told her about the symptoms and signs of Turner's syndrome, and she knows that she is going to be treated with hormones in order to get menstruation; she also knows that she cannot have children. In this connection the mother has suggested that when she marries, she might adopt children. It is the impression of the parents that this information has not been especially psychotraumatic for her, and it is their conviction that it was the only right thing to do. Elly says that she appreciates that she was told she has a hormone disorder, and the fact that she cannot have children has not been very much on her mind. Her shortness rather worries her, but she hopes to become at least 150 cm tall.

She says that originally she would like to become a teacher on account of her interest in small children, but she has now decided to try to get a university degree in Danish which she will use for further training as a librarian. The mother says that these plans are her own, but the parents have supported them.

Interview with the 15-year-old sister, Teresa, three years after the examination of Elly

Teresa is in the school-leaving class of a »realskole«, she is not very hard-

working and shows little inclination for school; she is more interested in her spare time interest of riding, she takes care of her own horse at the riding club, and she goes to the club every day and rides as often as possible; it is at the club that she has her friends.

She does not think that she will continue at school after taking the school-leaving examination of a »realskole« at 17. She has no particular inclinations for the future.

She and Elly have always been quite different in behaviour. Elly has been the sweet, diligent, nice, well-dressed girl who easily makes contacts wherever she goes and likes to talk with adults, while she herself has been more boyish and interested in outdoor activities such as riding. Elly is now in the mathematical science line at the grammar school, doing very well as always. She still sticks to her plan of becoming a librarian.

Teresa says that Elly has been spoiled by her father who has indulged her at every turn.

No. 5, Grete, an 8-year-old girl with karyotype 45,X. Height: 127 cm

Grete has always lived in the capital; her father is a fitter. She has a 3-year-old sister.

Her relations with her parents are happy, and she loves her little sister. The mother says that Grete has always been an extremely easy child, much easier than her sister. She is a very happy, active and contented girl. She is hard-working, careful with her work and very eager to know about everything. She keeps on asking until she gets a full explanation which may be somewhat stressful for her parents. She is what her parents call a precocious child, and she likes to join in adults' conversation.

She is very happy at school, and the teachers like her. She has many friends, she has never been teased, and she gets on well with the other children at school. She has no difficulties in any subject at school, and her parents think that she is about average in her class.

She has many friends both in and out of school, there are always many children visiting her at home. She is very active in her games with other children, but she also likes quiet games like jigsaw puzzles or playing with her dolls.

She has some difficulties with certain manual things, for instance handling a ball or other games requiring coordination of hand and eye movements.

No. 6, Anja, a 30-year-old single clerk with karyotype 45,X/46,X,del(X)(q26)-dup(X)(q13q26). Height: 156 cm

Anja grew up in the capital and still lives there. Her father is a salesman; she has three sisters, 34, 25 and 23 years old, respectively.

Her relations with her parents and siblings have always been happy. She says that the fact that her parents got a divorce when she was 18 does not mean the the relationship between them was especially poor during her childhood.

As far as she knows she developed normally as a child on the whole, except that she was slender and growth retarded.

She went to a private school for girls from the age of 6, and she left at 17 with a so-called girls' school-leaving examination which is similar to the school-leaving examination of a »realskole«. She insists that she was always very happy at school. She got on splendidly with the teachers as well as with the other children, and she had several good girl friends. She was always the shortest in her class, but she was never teased, although her short stature was sometimes remarked upon. This, however, never bothered her, and she did not count it as teasing. She had no problems at school, except with gymnastics and sports where she was handicapped on account of her short stature.

She was average in her class or slightly above in all subjects, but she had some difficulties in mathematics and only managed by hard work. She had to study quite hard to keep up with the best in her class. She has always been told that she is rather slow, but thorough in her work.

She read many books as a child, and she still reads a lot. She was interested in needlework, and she also used to help her mother a great deal and spend much time together with her girl friends.

After leaving school at the age of 17, she became an apprentice in an office and attended a commercial school. She did well and liked her apprenticeship, but left after the compulsory three years. She then spent one and a half years in a small medical firm where she did the bookkeeping. This work interested her, but she left to get a job on the Reader's Digest where she remained for six years. She liked this job, but when it became routine, she changed to her present employment in a coffee firm where she has been working for the last year and a half. She acts as shipping clerk and deals with customers; her work is varied and quite interesting, but nevertheless she is beginning to get a little bored with it and is seriously considering to start training to become a librarian which has always interested her. She hopes she will be able to study and keep a half-time job in her present firm.

After working on the Reader's Digest for six years, she spent three months in England where she attended a university course in English language and literature. She has furthermore passed a state controlled examination in English and taken a one year's training course in accountancy at the Commercial School in Copenhagen.

She met her present boy friend, who is a housepainter, three years ago; he is from Israel and came to Denmark five years ago. He comes from an orthodox Jewish family. She has just started to study Hebrew, and she intends to convert to the Jewish faith before her marriage in a few months' time. It is her intention to move to Israel where all the relatives of her future husband live. She has

visited Israel three times and been very well received by her boy friend's family; she is convinced that she will be able to adjust to life in Israel, but she realizes that she is obliged to learn Hebrew and to convert to the Jewish faith and give up her Danish nationality. She makes a great point of her firm intention to train as a librarian before she goes to Israel in order to ensure a good educational background for herself that will enable her to provide for herself should the marriage not last.

She is living with her boy friend in a two-room-apartment in good financial circumstances.

She was 15 years old when she was told that she most probably could not have children. Hormonal treatment was instituted when she was 18, but owing to many side effects, e.g. nausea and indisposition, was discontinued for three years, and then resumed about a year ago, this time without any side effect.

During the period without treatment she suffered very much from dryness of the mucous membranes of her mouth, nose and vagina; this has disappeared during hormone treatment, and she says that the treatment generally makes her feel better. Her sexual libido is more pronounced, and sexual relations with her boy friend are very satisfactory for both. They both love children and have decided to adopt a child when they marry. They will apply for adoption permission as soon as they are married.

She describes her mood as good and stable, but she is somewhat sensitive. She makes contacts easily. She has several good friends and never feels lonely.

Interview with the 24-year-old married sister, Belinda, three months after the examination of Anja

Belinda passed the school-leaving examination of a »realskole« and left school after spending one year of the three years' course at the grammar school. She was tired of school and has never regretted leaving without the university entrance examination. She took a course of training at a commercial school and became a clerk. She is now working as an assistant in an accounts department in a real estate society, and she likes her job. She married at the age of 21, her marriage is happy. She has a one month old son.

Belinda does not consider Anja very different from herself and the other two sisters, but she says that Anja used to work harder at school than she and her sisters did. She has always been very conscientious and helpful to others. It is Belinda's impression that Anja usually gets too little out of her diligence; other people have a tendency to take advantage of her. She has, however, very good friends, and she keeps her good friends. She is somewhat more sensitive than her sisters who are usually on their guard not to hurt her feelings.

Anja was later in her development than her sisters as far as interest in boys is concerned, but she has not otherwise been more immature.

No. 7, Irma, a 9-year-old girl with karyotype 45,X. Height: 110 cm

Irma has always lived in the capital. Her mother, who is single, is a clerk. She has a 10-year-old half brother and a 4-year-old half sister. She has never known her biological father.

She was a very fretful baby, and there were eating and sleeping problems. She has always been hyperactive, she is not able to sit quiet for more than a few minutes at a time.

As a baby she was put into a day nursery and later in a kindergarten. She now goes to school as well as to a recreation-centre. She started school at 7, and she had great difficulties in adjusting. She was restless, unconcentrated, violently seeking contact, and she learned nothing. She was teased on account of her short stature and her protruding teeth. On the advice of the school psychologist she was transferred to a class for retarded children where she has now been for the last two years. She has learned a lot, she is able to read and write, and she is doing quite well for her age. She is not teased very much, and it does not bother her much any longer. She gets on well with the other children at school as well as with the teachers, and her ability to concentrate is much improved, but it is still difficult for her to keep as still as required by the school. She says that she is happy at school, and, according to her own opinion, she is doing quite well in all subjects.

The teachers describe her level of performance in accordance with her age. She is usually unconcentrated, but full of energy. She depends a lot on the support of her teachers. She has vivid imagination and great creative ability. When working in a group, she is often the leader, but her attempts at physical contact with the other children are usually rejected. Her relationship with the teachers is characterized by a great need of physical as well as emotional contact.

The mother says that the hyperactivity of Irma is exhausting. She is never quiet for a moment from morning to night, but her activity may also be positive; she is very helpful at home more so than her two siblings, whom she often urges to help too. She is quite independent, and, in her mother's opinion, mature for her age; she is precocious, and she likes to know about everything. She is also **jutting in on the conversation of adults which is often irritating, particularly when the mother has visitors.**

The mother says that Irma is inclined to be hot-tempered, but she does not think that she herself has ever been as hot-tempered and stubborn as Irma who can be quite distracted when her siblings tease her or something goes against her. It is, however, quite apparent that the mother does not feel that Irma has any mental disorder. She is aware that Irma has a great need of contact, love and fondness which she does not get covered in the present circumstances without a father, and with the mother out at work all day. Several members of the family have advised her to send Irma away to a treatment-home or to give her seda-

tives, all of which the mother has refused to listen to.

No. 8, Katja, an 18-year-old single girl with karyotype 45,X/46,XX. Height: 141 cm

Katja grew up in a small town, but she is now living in the capital. Her father is a gardener. Her parents were divorced when she was 2 years old, and she and her 18-year-old brother were both sent to an orphanage from which, eight years later, they were both adopted by a paternal aunt.

Katja says that her childhood at the orphanage was quite happy, there were only six children at the home, and the superintendent was a good substitute for a real mother. They missed, however, a father.

She had no difficulties during the first years at school, she was among the best in her class, and she liked school. Later she had, however, some difficulties in arithmetic. When she was adopted at the age of 10, she moved to another school, and here she was not nearly so happy in her relations with the other children; she was teased, mainly on account of her short stature and, during puberty, also because of her lack of interest in boys like the other girls. She was easy to tease as it made her flare up.

Her teachers describe her as a girl with no special difficulties. She had a great need of contact, she was sensitive and easy to tease. She got on well with her teachers, and she had a remarkable understanding of other people.

Her relations with her adoptive parents, whom she considers her real parents, have always been happy. She feels no bitterness towards her biological parents for deserting her and her brother and leaving them to be brought up in an orphanage.

After leaving school at 16 she stayed at home with her adoptive parents for a year doing the housework while her mother went out to work, and she had no difficulties. She then spent one year in domestic science with a family with four children. This suited her, and she had no difficulties. For a short period she worked as an apprentice in a draper's shop, but this gave a number of problems; several customers complained that they objected to be served by her on account of her short stature, they considered her a child. She was consequently only allowed to do minor jobs and left after five months and was apprenticed to a bookbinder, but here too she was discriminated against on account of her short stature. The proprietor tried to pass her less than the other apprentices of normal stature, and she was dismissed as she would not accept this arrangement.

At present she is trying to get temporary employment at a factory while waiting to be accepted for training as an occupational therapist or teacher at a recreation-centre.

She has always managed well socially and financially, she has her own apartment getting no assistance from her parents.

She reads a lot and can get through a book in three to four hours. She is also interested in sewing and knitting and during the last three years she has been attending night courses in ceramics, textile printing and English. She has no real girl friends, but at the moment she is on quite good terms with a 17-year-old female cousin, and she often goes out together with her brother and his friends.

She has occasionally had a boy friend for a very short period, but as soon as the question of sexual relations comes up, she withdraws. She has, however, on one single occasion tried to have sexual intercourse without success, and she intends to postpone further sexual relations till she meets the man she wants to marry.

One of the physicians in the present study has recently informed her of her chromosome aberration. She is grateful to have been given this information, but sad that she will not be able to have children. She intends, however, to marry and, if possible, adopt children.

She has always been unhappy about her lack of secondary female sexual characteristics. She has not received hormone treatment yet.

She considers herself quite sensitive; when she was younger, she had a tendency to react impulsively and probably somewhat aggressively, but this is not so any longer. She may be somewhat nervous when faced with new situations, but not otherwise.

No. 9, Maja, a 19-year-old single domestic servant with karyotype 45,X/46,X,?del(Y)(q11). Height: 155 cm

Maja grew up in a small town, and she still lives there. Her father is a printer. Her eldest brother died at birth, she has two sisters who are 16 and 13 years old, respectively.

Her relations with her parents and siblings have always been happy.

She developed normally as a child. She had no difficulties at school, except in mathematics. She was not very interested in handicrafts such as drawing and needlework. She has always been rather clumsy with her hands.

She got on very well with her teachers and the other children at school, but she had few real friends. She was not teased at school, and she participated in school sports like the other girls.

Her teachers describe her as a girl with no special difficulties. A nice and sociable pupil who was shy and had some difficulties in oral expression. She got on very well with the other children and with the teachers.

For three consecutive summer holidays she worked at a Grand Danois kennel, and she became so interested in this work that she started her own kennel at the age of 16. She has sold 15 to 20 Grand Danois puppies for up to 1,000 kroner per puppy, and her dogs have won prizes at international exhibitions. She has seriously studied all problems concerning the raising of Grand Danois dogs. She gets very eager while talking about her dogs.

After the school-leaving examination of a »realskole« at the age of 17, she attended a five months' course at a folk high school; this was a great and fascinating experience for her, she made several »real friends« for the first time, and she became more extrovert and talkative and got more self-confidence. Her previous difficulties in making new friends disappeared.

She became a domestic servant after her stay at the folk high school; there were two grown-ups and three children in the family and a lot of work, but she had no difficulties, and she liked her job.

This autumn she is to begin a three-year-course in domestic science qualifying her to teach in this subject. She is looking forward to this, but she is somewhat worried about having to leave her kennel in the hands of her father and sister.

When talking about sexual libido and sexual relations in general, she blushes and becomes shy. She says that she is interested in boys and plans to marry sometime in the future, but she has not had a boy friend yet. She is grateful for the information she got approximately six months ago concerning the consequences of her chromosome aberration. It made her sad, but she considers it better to know the truth so that she can seek permission to adopt a child when she marries.

She considers herself sensitive with a tendency to emotional lability and dysphoria. She cries easily whenever she gets sad or angry. She says that she is quite hot-tempered.

She suffered from enuresis till the age of 17. Before the age of 17 she occasionally suffered from periods of depression lasting a few hours; she thinks these were due to feelings of loneliness and inferiority.

No. 10, Evy, a 22-year-old single untrained nurse with karyotype 45,X. Height: 158 cm

Evy grew up in the capital, and she still lives there. Her father is a stores manager. She has always got on happily with her parents, who are understanding and have tried to help and support her in the best possible way. She has a 25-year-old brother.

She did well at school, she was best at the language subjects and had some difficulties in arithmetic; she got, however, very good marks in all subjects. She always got on well with the teachers. She was teased a little on account of her short stature around the age of 9 when she changed school, but it did not bother her much, and she has always been quite happy at school.

Her teachers describe her as a clever girl with good abilities, but she had difficulties getting along with other children.

When she finished school at the age of 17, she served an apprenticeship lasting two and a half years at an insurance office. She was happy there, and there were no difficulties. She remained at the insurance office for another six months, but

then decided that she wanted to become a children's nurse and took service with a family having three children; she gained satisfaction and was happy. She next worked a year at a day nursery and three months at a maternity clinic. She liked the work at the day nursery, but left the maternity clinic because of the snobby atmosphere feeling that she was being exploited with regard to the work required of her. Last summer she worked at a restaurant, and has recently got a job at a kindergarten. Up till now she has been living at home, but she is looking forward to moving to another city and living on her own.

She tried to get into the welfare training college, but on account of an overwhelming number of applicants she was refused and advised to get further practical training before applying again. She hopes she will succeed in being admitted to the welfare training college next year and train to become an infant school teacher. She likes to work with children, and she thinks she is quite good at it.

Concerning her spare time interests, she says that she has been a member of a riding club since the age of 12. She has attended a dancing course for the past five years, and she recently became a member of the Red Cross' first-aid corps; she hopes to be assigned to a so-called emergency squad. She has saved up money during recent years and is planning to buy a car in the near future.

She does not think that she has been less mature than other girls of her age, but she has been retarded as far as secondary sexual characteristics are concerned. She is especially unhappy about her scanty mammary development.

At the age of 18 she was told that she had no ovaries, and that she could most probably never have children. She was also told that it was necessary for her to have hormone treatment in order to get menstruation. This information did not come as a tremendous surprise, she had been afraid of something like this, but she would have preferred to have had the information somewhat earlier, at the age of 15 or 16.

Hormone treatment was started four years ago, and she developed regular menstruation and secondary sexual characteristics. She has not been given hormone treatment during the past eight months. She felt better during hormone treatment, she had more strength and got less tired, and her mood was more stable. She was 154 cm tall when hormone treatment was started at the age of 18, and she is now 158 cm tall. She is quite satisfied with this height, and she knows that she is taller than most girls with the same disorder.

She says that she is sensitive and easily becomes dysphoric, but her mood is generally quite good and stable. She has previously had a tendency to have inferiority feelings in her relations to other girls on account of her short stature and scanty mammary development, lack of menstruation and sterility, but during hormone treatment these feelings became much less pronounced, and her relations with other people became more stable. She does not think that she has any great difficulties in making contacts or in making friends; she has several good friends.

She had her first boy friend at the age of 18, the association lasted three months, and there were no special problems; sexual relations were quite good. She kept her next boy friend for one and a half years. It was he who broke off the connection, and as far as she knows it was on account of her lack of secondary sexual characteristics. She felt in a way relieved when he left her. She does not intend to have a new boy friend until she meets a man that respects her and loves her, and one with whom she could contemplate marriage. She would like to adopt a child when she marries, and her physician has promised to help her with the adoption permit and to tell her husband about her disorder.

No. 11, Ann, a 24-year-old single clerk with karyotype 45,X/46,X,r(X). Height: 138 cm

Ann grew up in a provincial city, and she is still living there. Her father had a grocer's shop. She has an elder brother who died when a few days old, and she has a brother who is 22 years old and a sister who is 10 years old.

Her relations with her parents and her younger siblings have always been happy. Her parents have helped and supported her very much, and she appears to have been overprotected.

She was teased during the first years at school, but she was always quite happy at school, and she got on very well with the teachers and with the other children at school. She had, however, some difficulties in making real friends, and since the age of 18 she has had no girl friends at all.

She did quite well at school, she was best at languages, but she had no special difficulties in any subject. At the age of 17 she passed the school-leaving examination of a »realskole«, and she then continued at a commercial school taking a certificate two years later. The last year at the commercial school was quite difficult, everything overwhelmed her, and she was very happy when her exams were over.

Her teachers describe her as a quiet, hard-working, conscientious girl who liked to do other people a favour and who cooperated well. Her behaviour was always excellent.

She obtained clerical employment, but could not manage it at all and was referred to a rehabilitation centre for four months before being placed in a so-called protected job at the revenue office in her home city where she has been working for the past three and a half years. She likes her work, and everybody is so sweet and kind to her. She is mainly occupied with the distribution and despatching of the post as well as with a variety of easy tasks.

She thinks that she would now be able to manage a more exacting job, and she dreams about a secretarial post, but she is afraid that she is too nervous and too uncertain of herself to manage such a job, and she is so far quite happy where she is and proud of the fact that her salary has recently been raised.

During the first year at the office there were often periods during which she

felt that everything was hopeless and overwhelming, but these periods, which usually only lasted a few days, have become quite rare; they are usually provoked by demands as far as work is concerned or by adversity or criticism. She has always been very afraid of not doing her work well enough or of not working fast enough, and occasionally she has to control her work in a phobic way.*

She used to play the piano, but she stopped this a long time ago. She likes to sew and knit a little, and she also does some reading, but none of it interests her very much. She does not have the strength for any real spare time interests. She never goes out with others, and she does not have any girl friends or boy friends. Whenever she does go out, it is always together with her parents.

She has never had a boy friend, she has, however, often thought about finding one. She doubts, however, that she would ever be able to cope in a marriage, and she says that she does not really feel like ever marrying.

At the age of 18 she was told that she lacked the glands for growth and hormone production, and she was told that she could not have children. This made her a little unhappy, but it was not hard to bear.

She has been given cyclic hormone treatment since the age of 18, menstruation has always been regular during this treatment, and she has developed secondary sexual characteristics. Furthermore she thinks that her mood has become slightly more stable and her nervousness and sense of insecurity have decreased during hormone treatment. Besides the hormone treatment she is also getting a mild sedative for her »nervousness«.

No. 12, Dagny, a 36-year-old married clerk with karyotype 45,X. Height: 152 cm

Dagny grew up in the capital and still lives there. Her father is a blacksmith, she has a 33-year-old sister and a 27-year-old brother.

The mother was very dominating, and the parents were both overprotective; they made every decision for her until she married. She is firmly convinced that in spite of this her childhood was happy, and it was not till she grew up that she realized how much injury her mother's interfering nature had caused her. In this connection, she tells how her parents would immediately complain to the school if there were problems of any kind, for instance if she was teased by the other children or if she told about any of her experiences at school that did not please her parents.

Her teachers describe Dagny as a hard-working, conscientious girl whose behaviour was invariably excellent, and whose relations with the teachers and other children were of the best.

She had a kidney infection when she was a baby, and she was hospitalized on this account, but her development was otherwise normal. Her appetite was always poor, and in her mother's opinion she always ate too little as a child.

She passed the school-leaving examination of a »realskole« at the age of 17

with comparatively high marks. She never liked school. She was teased, and she always felt that something was wrong with her, that she was different from the others. She was always the smallest in her group. She got on very well with the teachers. She also had a few girl friends and has still kept up with a couple of them. She worked fairly well at school. She had some difficulties in arithmetic, but she managed to overcome them, and she was usually average in her group.

As a child she played the piano, read quite a lot, was quite active and seems to have been fairly well adjusted.

After leaving school at the age of 17 she began to serve an apprenticeship in an office, but she did not like it. There were difficulties with the other staff, and she soon left and got employment at a law court where she remained for four years. She enjoyed the work and got on well with the rest of the staff and with her superiors. She stopped working when she married at the age of 21.

She met her present husband at the age of 18, and they married when she was 21 years old; the marriage has been happy on the whole, but during the past years her husband has become increasingly dissatisfied with her because she does not eat, and because she is always tired, depressed and has fits of weeping. He has recently given her the ultimatum that unless she very shortly pulls herself together and starts eating and getting in a better mood, they will have to part. Concerning the marriage she says that her husband is quiet, well-balanced, loving, helpful and understanding. The sexual relationship was very poor the first years. She got no satisfaction out of sexual intercourse and found it quite unpleasant, but during the past two years, after she had stopped taking hormone tablets, sexual relationship has been quite good, she now gets full satisfaction, and it is her impression that her husband is satisfied also.

She and her husband applied for permission to adopt a child shortly after they were married; they waited for five years, and got a 4-month-old boy. Having this boy has made them very happy; he has developed normally, he is a nice and wonderful boy.

As a child Dagny was quite slender, but from the age of 16 till the age of 20 she became obese. From her twenties, however, she began losing weight; she developed anorexia nervosa. During certain periods she has practically eaten nothing at all. She has been down in weight to 29 kg. Approximately a year ago, she was treated at a psychiatric hospital, and she has also been admitted to a medical ward on account of her anorexia nervosa.

During the past few years everything in her life has turned around the question of eating and the attendant problems. She is afraid of eating meat because she has the feeling that if she eats a small piece of meat, she may gain as much as 3 kg. She knows very well that this is not true, but she cannot get away from this idea. She usually eats half a litre of junket and five or six pieces of toast a day together with some tea. Occasionally she gets a sudden tremendous urge for food, and previously she used to go out and buy a $\frac{1}{4}$ of butter and a $\frac{1}{2}$ of white bread, eat all of it at one go, and then throw it up again, but she seldom

does this now because it makes her feel very sick.

During the past few months she has become increasingly depressed, she often cries for hours. The depression is unbearable, especially in the morning, it wears off a little later in the day and during the night. She has self-reproaches, especially concerning her responsibility for her husband and son. She is often so restless that she cannot stay anywhere. She is anxious, depressed and cries. She is obsessed by the problems concerning her eating. She cannot sleep at night, and she reproaches herself for not behaving towards her husband and son as she should. She feels that everything is hopeless.

Her husband has told her that she has got to pull herself together, start eating and get into a better frame of mind, otherwise they will have to part within a couple of months. She says that if it comes to this there will be nothing else for her but to commit suicide. She cannot live without her husband and son.

She was admitted to a psychiatric hospital for three months at the age of 34 years. The diagnoses were anorexia nervosa and character disorder (hysterical). On admission her weight was 35 kg, it fell to 33 kg, and gradually came up to 40 kg which was a condition for discharge. She was treated as an out-patient for six months. She was re-admitted for five days at the age of 36. The diagnosis was hysterical neurosis.

Her husband states that he has known his wife for 15 years; she was a very natural, nice and happy girl when he first met her, and she was well adjusted during the first many years of their marriage. Two years before the first admission she weighed 50 kg, and her stature is 152 cm. At that time she started thinking she was too fat, and she began on a low calory diet and became very much aware of how many calories she was consuming.

Her husband states further that she has always been tremendously over-protected by both parents, the father especially seeming to be quite dominating. He smothers her with his love and overprotection, and at the same time he is most exacting. If she says anything that he does not agree with, he may leave the room in anger.

Interview with the 33-year-old married sister, Sonja, three months after the examination of Dagny

Sonja states that she herself did fairly well at school. She left school at 17 and trained as a ladies' hairdresser, but gave it up due to backache. She has been working as a kindergarten attendant during recent years. She has been married for 11 years and has two daughters. The marriage is quite happy, but has been through a difficult period.

Sonja says that her sister Dagny was cleverer and more hard-working than any of her three siblings. She was one of the best in her class at school while her siblings were average. She has always been a perfectionist. When she goes in for

a thing, she does it 100 per cent. She still has several good friends from her schooldays. She has been quite mature and that at an earlier age than her siblings.

All the siblings were overprotected at home, the parents have always wished to do everything as well as possible for their children. Dagny is in some ways similar to her father, stubborn and impatient, and she often has quite violent discussions with her father, but at the same time they are very much tied to each other.

As a child Dagny was quite chubby, and she was rather teased for this. She was never forced to eat by the mother, and there was always a relaxed atmosphere around meals.

Sonja describes Dagny as more extrovert and better able to give expression to her feelings than her siblings. Her husband is a very nice and considerate man. He has had great success in business during recent years, he is often away on business trips, and it is Sonja's opinion that he has probably become too successful for Dagny to follow him.

Sonja is in close contact with her sister Dagny, and she feels that Dagny suffers quite a lot on account of her fear of eating and her anxiety. Sonja does not think that Dagny's 6-year-old son suffers, she says that Dagny takes very good care of her son, and he seems to be well adjusted, happy and active.

No. 3, Kirsten, a 15-year-old girl with karyotype 45,X. Height: 137 cm

Kirsten has always lived in a small town. Her father is a retail dairy manager. She has an 18-year-old brother and an 11-year-old sister.

The mother says that Kirsten has always been somewhat retarded as to her physical and mental development, compared with her two siblings. She was born with severe pterygium colli for which she was operated when she was 6 years old. She began school at 7, but had great difficulties and was transferred to a special class group for children with learning difficulties. She is now in the 9th form and is doing quite well, compared with the other 10 children in her class. She has, however, great difficulties in arithmetic. She is going to stay on at school and go into the 10th form, and, during the interview, I talk with her about spending a year at a boarding school.

Kirsten says that she has been happy in this special class, nobody has teased her, the pupils in her class stick very much together, and she likes the teachers. She has no real friends, she lives 8 km from school, and the parents do not like her to go to town together with friends outside school as they fear that she might get into bad company as she is so easily influenced.

The teachers describe Kirsten as an extrovert, happy and cooperative girl who is well adapted at school and very seldom has any conflicts with others. She has always liked school, and she has a great interest in all subjects and uses her abili-

ties to the full; she is doing quite well in all subjects. She gets on well with the teachers and with the other children.

The mother says that Kirsten was always nice and contented during babyhood and early childhood. She is usually happy and well-balanced. It is easy for her to make contacts, she is helpful and relatively hard-working, and she has a sense of responsibility and takes good care of the children where she has jobs as a babysitter. She has been at a kindergarten a month, and she likes taking care of children very much. She would like to become a children's nurse.

She has no special spare time interests, she knits a little, she helps at home, she takes care of the neighbours' children, she loves to watch sports, especially handball, and to listen to music. She has recently started playing badminton which she likes very much, but she has otherwise not been nearly so active as her siblings. It appears from the interview that her parents have overprotected Kirsten quite a lot. They consider her quite immature mentally, only developed according to the age of 11-12. The mother says that Kirsten cannot keep girl friends of her own age, they get tired of talking to her, and they think she is too childish.

Kirsten says that she hopes very much she will become better at arithmetic and get enough education for her to be accepted for training as a children's nurse. She likes very much to play badminton and enjoys having the opportunity to meet other young people at the badminton club, but she has no real friends.

She does not have very much contact with her siblings, they get along quite well, but quarrel in the way siblings usually do. She gets on well with her parents. It seems to be the mother who makes most decisions for Kirsten.

No. 14, Ina, a 24-year-old married clerk with karyotype 46,X,del(Xq). Height: 150 cm

Ina grew up in the capital and is still living there. Her father is a joiner. She has a sister who is 21 years old. Her parents were divorced when she was 19 years old.

She developed normally as a child, except for growth retardation. She did well at school, she was diligent and interested and had no special difficulties in any subject. She was teased because she was short and fat. At the age of 9 she was admitted to hospital for concussion due to an attack by the other children at school. She insists, however, that she liked school, and she got on very well with the teachers. She always had a few good girl friends, but she had difficulties in keeping them.

She did not pass the test for the school-leaving examination of a »realskole«, and she left school at the age of 16. She started an apprenticeship at an office, but, according to her own opinion, she was too immature to fit into the pattern at the office. She was dismissed after three months on the grounds of immaturity.

Her teachers describe her as a remarkably hard-working and conscientious girl. She was friendly, helpful and eager to do others a favour. Her behaviour was excellent, she twice received a prize for diligence.

She spent six months at a youth school and was very happy there. She then got an apprenticeship at an office which she completed after three and a half years with no difficulties. She worked one and a half years for an insurance firm, but never settled down, she did not join any of the many clinics, and she was not really accepted by the others. She next worked one and a half years in a bank, but there was too little to do. In this connection she says that she always feels best when she has plenty to do, she easily becomes restless and nervous when there is not enough work.

She always tries to attend all available courses in order to become better qualified for her job.

In her spare time she knits and sews, but she reads very little. As a child she went in for ballet and acrobatics, and she has taken dancing lessons since the age of 17. She also goes in for gymnastics.

She met her present husband at the dancing school when she was 17 years old, and they married when she was 20. Their sexual relations have not been very good because she has a narrow vagina. She has been treated for this with very little effect; she still has dyspareunia. In spite of this she likes having intercourse. She and her husband are both unhappy about the sexual difficulties, but it has not done any harm to their marriage.

They have applied for the adoption of a child, but they have been refused with the remark that this would most probably be »too much« for them. They are both most disappointed about the answer – they have steady employment, no financial difficulties and a good apartment, they are healthy, physically and mentally, and they love children.

Ina was examined on account of amenorrhoea at the age of 18. She was given cyclic hormone treatment from the age of 19, and she got regular menstruation till she stopped taking the hormones two years ago. She stopped because she was gaining weight, and because she did not feel any better physically or mentally during hormone treatment. She further felt menstruation was a great nuisance when she knew that this did not indicate that she could have children.

Her obesity has always been a problem for her, and she has been given tablets in order to lose weight. She could, however, not keep her weight under control during hormone treatment. Her relatively short stature (150 cm) does not bother her nearly so much as her obesity.

Her mood is usually good and stable, but she may have shorter periods of dysphoria and inferiority feelings, mainly due to worry about her obesity.

She easily becomes irritable and hot-tempered, but she quickly abreacts. She has no difficulties in getting along with others, and she has several good friends. She matured later than her friends. She did not become really grown up till she moved away from home and got married. She says that her husband has helped

her quite a lot in growing up and becoming mature.

No. 15, Kate, a 38-year-old married disability pensioner with karyotype 45,X/46,X,i(Xq). Height: 136 cm

Kate grew up in a provincial city, and she is still living there. Her father was a wrapper, he died at the age of 66 after a traffic accident, and her mother died at the age of 65 of uterus cancer. She has a dizygotic twin sister, a 45-year-old brother and two sisters, 52 and 49 years old, respectively. Her relations with her parents and siblings are happy.

She went to a Catholic school, and she did quite well, but she had some difficulties in arithmetic, she was given extra teaching in this subject. She was very diligent and got on well with her teachers.

She was teased by the other children because she was short of stature, was adipose and limped (she suffers from morbus Calvé-Perthes). She liked school, however, and she always had a few good girl friends.

After leaving school at the age of 16, she went to a school for physically handicapped. She was briefly tested for office work, but the teachers decided that this was not the right thing for her, and contrary to her own wishes, they forced her into an apprenticeship as a bookbinder. She left this apprenticeship after a few months because of disagreements with the foreman who tried to compel her to become right-handed in spite of the fact that she is left-handed. She next spent a year in domestic service; the work suited her, and she had no difficulties.

At the age of 19 she was given a disability pension on account of her morbus Calvé-Perthes, and from the age of 20 she spent two years at a rehabilitation centre where she learned to sew.

When she was 29 years old, her mother died, and she had to move to another apartment. It was a very stressful period, and she felt nervous and depressed until she met her present husband two years later. They were married when she was 33. Her husband is nine years older than she; he receives disability pension on account of arthrosis of the hips and elbows.

The marriage is happy and stable, her husband has helped and supported her in every possible way, and they have many interests in common; at present they are attending a swimming course. They live in a good apartment and have no financial problems. They share and have several good friends. Their sexual relations are fairly good, there may, however, occasionally be slight dyspareunia.

They are both sad that they cannot have children, but they have accepted this as a fact and enjoy taking care of the children of relatives and friends. They are happy and satisfied with their way of life.

Kate had spontaneous menstruation from the age of 15 to 21 with regular monthly periods of normal intensity. She later received hormone treatment, and two years ago bilateral oophorectomy was performed. She has not been treated

with hormones for the past two years, and during this period she has suffered from menopausal symptoms.

She was slender and thin till the age of 8-9, but from this age she became obese, and she has at times weighed up to 82 kg (her height is 131 cm). She has had pronounced mammary development from the age of 12.

Interview with the 39-year-old married sister, Laila, 16 months after the examination of Kate

Laila left school at the age of 15 from the 8th class like her sister, and she had domestic employment until her marriage at the age of 26. She has two children, and her marriage is happy. She has a job as a cleaning woman and says that she likes to work hard.

Laila, who is the twin sister of Kate, says that she and Kate have always been quite similar in all respects, but as to their personality development she says that she herself has been more hot-tempered than Kate who is quiet and well-balanced. Kate, however, has been more stubborn than she, it is always Laila who gives way first in a discussion. Kate is more extrovert, she makes contacts very easily while Laila is somewhat more reserved. They both have a good and stable mood.

Kate matured mentally somewhat later than her siblings, but Laila explains this as a possible consequence of the fact that she and her sisters left home to go into domestic service at the age of 14-15 while Kate remained at home and was somewhat more protected on account of her short stature and her handicap in walking due to hip deformation.

Laila says that Kate is happy and well adjusted in her marriage and in general; she has many activities and interests, and she loves children and takes great care of nephews and nieces.

No. 16, Judy, a 27-year-old single clerk with karyotype 46,X,i(Xq). Height: 141 cm

Judy grew up in a provincial city, and she still lives there. Her father was a greenkeeper, he died at the age of 56 of cancer of the lungs. She has three sisters, 39, 34 and 21 years old, respectively. Her relations with her parents and siblings have always been happy. Her mother told her that she was »early« in her development as a child, physically as well as mentally.

During the first years at school she was teased because she was short of stature and obese. She was teased mainly for her obesity. She always got on well with the teachers, and she did quite well at school, even though she did not work very hard. She had no special difficulties in any of the subjects. She got very good marks at the middle-school examination, and she had intended to work for the school-leaving examination of a »realskole«, but had felt obliged to give up after

having spent two months in hospital for examination for Turner's syndrome. She says that she did not have the energy to catch up with the others in her class for what she had lost during the two months in hospital.

Her teachers describe her as a diligent, well-behaved girl. Everydoby liked her on account of her high spirits.

She was employed for eight months as a domestic servant, she gained satisfaction and liked the work. She spent a year at a commercial school with fairly good results, and she became an apprentice at an office. She had no difficulties during the three and a half years' apprenticeship. For the past six years she has been employed by an automobile firm – she likes her work and has no difficulties. She has her own apartment, but she often visits her mother who lives in the same city.

She is interested in needlework and reading. She has previously attended a course in German. She relatively often goes out with friends to dance or to the movies, and she makes contacts and new friends easily.

She had her first sexual relation at the age of 23. She had a boy friend for a year. He left her, however, for another girl, which upset her very much, although she got over it relatively quickly. She thinks that he left her on account of her short stature and obesity, conditions which have made it difficult for her to find a boy friend. Sexual relations with the boy friend were good, there were no difficulties, and she got full satisfaction.

She menstruated spontaneously three times at the age of 15. From the age of 16 she was given cyclic hormone treatment. She stopped taking the treatment because menstruation did not ensue.

At the age of 22 she was examined for possible carcinoma on portio, and oophorecto-salpingecto-hysterectomy was done. During a short period after this she was treated with hormones, but she has not been given any hormone treatment for the last two years. During this period she has suffered from perspiration, nervousness and indisposition. She also gets brief periods of dysphoria, most pronounced at night.

She was quite shocked when she was told that she would not have been able to have children even if she had not been operated as she had no ovaries. She did not get this information till the age of 22 before the operation. She has, however, accepted the fact that she cannot have children, and she plans to apply for adoption if she marries.

During admission to a gynaecological department at the age of 16 it was found that she had mild diabetes mellitus. She was given oral antidiabetic treatment. At that time she was quite obese, and her diabetes disappeared when her obesity disappeared. At the age of 23 she again had a brief spell of manifest diabetes, she was treated with diet and insulin, but during the past two years she has received no treatment, and there have been no symptoms or signs of diabetes mellitus.

Interview with the 23-year-old single sister, Liva, 16 months after the examination of Judy

Liva passed the school-leaving examination of a »realskole« at the age of 17. She did well at school, but she had some difficulties in subjects that needed concentration and a good memory such as history. Such subjects were, however, the best for her sister Judy who had great powers of concentration and memory whereas she had some difficulties in arithmetic. They were, however, both quite good at school and in the best part of their class.

Liva passed a commercial school examination and served an apprenticeship at an office; she is now a clerk at the same firm, she is well adjusted and likes her job. She has had a boy friend since the age of 16. They have lived together for the past two years, they have an apartment in the same building as the mother.

Judy became interested in boys at the same age as Liva, but she has no boy friend yet. She goes out with friends quite often at the present time and has several friends.

Liva says that Judy has a very stable mood, she is very open and easily makes contacts. She herself may have dysphoric periods lasting a couple of days. Judy is probably more sensitive than she is, but less hot-tempered. Judy was quite active as a child, but she preferred indoor games, and she liked very much to listen to adult people's discussions and was somewhat precocious. Liva says that Judy was in many ways mentally mature earlier than she herself.

No. 17, Sara, a 9-year-old girl with karyotype 45,X/46,X,?del(X)(p22p11)del(q11). Height: 128 cm

Sara lives in the capital, her father is a house painter. She has a 3-year-old sister. She has always got on well with her parents and her younger sister. Her mother says that she has been much easier to manage than her sister. She is quieter, she likes to play quietly indoors, and she is not nearly so daring in her games as her younger sister.

To start with, she had some difficulties in being accepted by the other children at school, but she is over these difficulties now and has begun to make friends.

She is doing fine at school, but she has had some difficulties in grasping mathematics. She has been teased at school because of overweight, but rarely by the children in her own class. She is very careful with her school work, and altogether she is a perfectionist. She is somewhat sensitive and easily becomes nervous and sad when exposed to stress of any kind.

The teachers describe her as a hard-working, conscientious, extrovert and helpful girl. She is immature for her age with difficulties in arithmetic and in independent judgement and evaluation in all subjects.

No. 18, Rose, a 12-year-old girl with karyotype 45,X/46,X,i(Xq). Height: 127 cm

Rose lives in a provincial city, her father is a draper. She has a 29-year-old sister. The parents were divorced when she was 8 years old, and the father married again. He visits, however, Rose and her mother once a week and lives quite near-by in the same city, and the divorce has not changed her relations with her father very much.

She had severe sleeping problems as a baby and up till the age of 6 she used to wake up practically every other hour through the night.

She likes school, but she has some problems in reading and in arithmetic. She also has difficulties in gymnastics, but she is among the best at swimming.

She was teased because of her stature during the first years at school, this has, however, practically ceased, but she has no real school friends. She prefers to play with girls 2-3 years younger than herself, and according to her mother she is immature for her age. She still plays with her dolls quite a lot. She reads a lot, and she is interested in knitting and sewing.

The teachers describe her as a quiet, nice pupil who works with perseverance and concentration, but somewhat slowly.

The mother says that Rose has been a very easy child, she is nice, quiet, helpful, friendly and eager to satisfy everybody. She has good contacts with grown-ups as well as with children, but especially with children somewhat younger than herself. She is extrovert and happy, hard-working and careful with her work, but she is very slow with everything.

No. 19, Dora, a 24-year-old single clerk with karyotype 45,X/46,X,?i(Y)(pter→q11::q11→pter)/?del(Y)(q11). Height: 153 cm

Dora grew up in a provincial city and is still living there. Her father is a transport worker. She has an 18-year-old brother and a 17-year-old sister. Relations with her parents and siblings are happy.

She did not eat well as a baby, but she developed normally. Her mother has told her that she was very quiet, peaceful and easy to manage.

She has always been very shy and reserved. She went to a kindergarten from 4 to 6 years old, but she was not very happy there. She did not feel very comfortable together with other children.

She was always one of the smallest at school, and from the age of 10 she was the very smallest. The other children at school used to tease her because she was short of stature, but she was also teased because she was so quiet, shy and reserved, conditions which were far more stressful for her than the fact that she was rather short of stature.

The teachers describe Dora as a hard-working pupil who was careful with her work, but had difficulties in expressing herself. She was a very nice, well-behaved girl.

She had some difficulties in making friends with girls, but she always had at least one girl friend, usually one who was younger than herself. She has felt outside the fellowship, and she says that it has been terrible to be so quiet, reserved and shy.

She was average in her class in all subjects, and she had no special difficulties in any subject; arithmetic was one of her best subjects.

She was always careful with her school work at home, and her parents never had to prompt her in any way. She says that in spite of the teasing and feeling somewhat outside the fellowship at school, she was quite happy there.

After leaving school at the age of 16, she became an apprentice at a chocolate firm, and she completed her apprenticeship after two and a half years. She is still working in the same firm where she has now been for a total of seven years. She likes her work, it is rather independent as she is the only one in the office. There are six people altogether in the firm, and she gets on well with everybody, including the manager.

In spite of being happy about her work she sometimes thinks of trying some other job and getting further training, but she has no definite plans.

During the past year she has had her own apartment in her parents' building. She gets her meals with her parents, and her relations with them are happy.

She is attending a cookery course, and she has previously gone to gymnastics, jazz ballet and dancing. She is interested in knitting and embroidery, and she also reads a little. She goes to the movies or to dancing restaurants together with **girl friends once or twice a week. She has not had a boy friend yet, but she has had sexual relation once; she was not really in love with the boy, but she thought** she was so old that she ought to try it. She hopes she will eventually marry and have the possibility of adopting a child.

She was first examined with regard to Turner's syndrome when she was 16 years old, and she has been hospitalized three times for further examinations. From around the age of 17 she was given cyclic hormone treatment. She stopped taking this treatment approximately half a year ago as it made no difference in her condition physically or mentally. She has not felt any difference after she stopped taking hormones. It is of no importance to her that she does not menstruate as she knows that menstruation does not mean that she will be able to have children.

She does not think she has grown very much since the age of 15. Her stature is 153 cm, and she weighs 48 kg. Stature is no special problem for her, and she is quite satisfied with her height.

As a rule her mood is good and stable, but there has been a tendency for brief periods of dysphoria without any definite cause. During such periods she is very irritable at home, but she is able to fight down her irritability when outside home. There are no signs that the depressions are of endogenous origin. As a rule she thinks that the dysphoric periods are due to her own irritation about being so shy and quiet. New and stressful situations make her somewhat

nervous, but she does not otherwise consider herself nervous.

Interview with the 18-year-old single sister, Malene, 14 months after the examination of Dora

Malene passed the school-leaving examination of a »realskole« at the age of 17. She had great difficulties with mathematics, and she was quite lazy, everything was fun and games for her while her sister Dora was a much more diligent, conscientious and serious pupil who did much better at school. Malene says that she was always more active as a child than her sister Dora.

After leaving school at 17, Malene got an apprenticeship as a dental nurse, she left after one year and is now attending a one year commercial course. She plans to become a language correspondent.

Dora has become more active recently, and it has become much easier for her to make friends while Malene stays more at home. Malene says that both she and her sister Dora are sensitive with a tendency to dysphoria, but she herself is the more sensitive of the two. During recent years she has suffered from dysphoric periods lasting from one day to one week during which she hardly leaves her home. Malene describes both herself and Dora as somewhat hot-tempered.

No. 20, Iris, a 25-year-old single fitter with karyotype 45,X/46,X,i(Xq)/46,X,i(X)(qter→p11::p11→qter). Height: 141 cm

Iris grew up in a provincial city and is still living there. Her father is a book-keeper. She has a 23-year-old brother and two sisters who are 37 and 35 years old, respectively.

Relations with her parents and siblings are happy. Her father has, however, always been very hot-tempered, a fact which has often caused the family much distress.

Her mother has told her that she was somewhat of a problem child when she was small, especially as far as eating was concerned. She hardly ate voluntarily before the age of 8-9. She was often hospitalized for minor disorders of different kinds, mainly inflammation of the middle ear and »stomach trouble«. She knows that at least once she was hospitalized for volvulus, and she has further been in hospital for rickets. When she was small, she often had torticollis which was treated successfully with special remedial exercises.

In spite of eating problems she developed quite normally, but from the age of 6-7 she stopped growing as much as other children.

She went to five different schools due to the fact that the family moved. She was teased for her short stature and occasionally this made her cry and feel that

everything was hopeless, but she never stayed at home from school without good reason such as illness. In spite of the teasing she was usually quite happy at school and got on well with most of the other children as well as with her teachers.

She was usually average in her class, but she had great difficulties in arithmetic. She did, however, manage to become quite good at this subject also, especially after eight months at a youth school at the age of 16-17. She was very happy at the youth school, and she learned a lot. She had two different situations as a domestic servant at the age of 17, she liked these jobs and gave full satisfaction. She tried an apprenticeship at a bookstore, but the customers **objected to be served by a girl they took to be only approximately 12 years old, and for this reason she was dismissed after a month.** She tried training to become a children's nurse, but she had to leave both the institutions at which she tried, being informed that she was too immature. Her own opinion is that at the first institution she was persecuted by a person who did not like her, at the other institution she was dismissed because she had been obliged to absent herself for quite a lengthy period on account of a broken arm and common colds.

She was at a rehabilitation centre for approximately three months, she tried different types of manual labour which she managed well. From the rehabilitation centre employment at a factory for medical equipment was arranged; and she has been working at this factory for the past two and a half years. She does mounting work, partly on an hour basis, partly as piece-work. This work gives her no trouble, and she is quite happy even though she sometimes finds it a trifle dull. She gets on well with the other workers at the factory as well as with her superiors.

She sometimes thinks of getting further training, but she dares not try to become a children's nurse again and risk a new defeat. She might learn typing with a view to becoming a secretary, but it worries her that she was not very good at typing when she was at school.

A couple of years ago she moved away from home, and she now lives in a one-room apartment in the same city as her parents. She is happy to be living on her own, she often visits her parents, and her relations with them are very happy.

She reads quite a lot in her spare time. As a child she went to ballet, gymnastics and acrobatics, and she is thinking of taking courses in jazz ballet again, but she is rather hesitant about it because she considers herself too fat. She often goes to the movies or to dancing restaurants with girl friends, but she never goes out with a boy, and she has never had sexual relations. She has been given cyclic hormone treatment for the past five years. She may at times feel a desire for sexual relations, but she prefers to wait until she meets a man whom she loves and might marry. She hopes to marry, and she would like to adopt a child. She is, however, somewhat doubtful whether she will be approved as an adoptive mother because she is so short of stature, and because she appears immature. She does not consider herself immature - she has a better insight than most in

her own and others' behaviour. In this connection she says that she is the only one of her siblings who understands and accepts her father's hot-tempered behaviour which has often been stressful for everybody at home.

Her mood is good and stable, she is quite happy and satisfied with her life, but she is sensitive, and when she has been exposed to situations that make heavy demands on her, she may become depressed. She easily becomes nervous when placed in new and exacting situations.

No. 21, Dina, a 12-year-old girl with karyotype 45,X. Height: 120 cm

Dina lives in a small town. Her father is a house painter, she has two sisters, 21 and 18 years old, respectively.

The father occasionally drinks considerable amounts of alcohol, but relations between parents and children are good. Dina says that she loves her parents and sisters.

She suffered from bowel disorder and did not thrive. The mother says that Dina was not operated as the physicians thought her too weak to survive an operation. The parents were told that she would most probably die as a baby. The mother kept her alive by feeding her small meals every other hour until she was 8 months old. From the age of 8 months she began to thrive, and she developed normally, physically and mentally, except for short stature. She was a very quiet, contented baby, she never had any real defiance period. She had incontinentia alvi diurna till the age of 8, but her childhood was otherwise healthy.

She has always done well at school, and she is in the best half of her class. She has occasionally been teased for her short stature, and she has nicknames such as »Mini« and »Tiny Tot«, but she does not take offence at being given nicknames. She has no difficulties in any subject at school, except for spelling; arithmetic is one of her best subjects.

The teachers describe her as a happy, charming, extrovert, well adjusted and hard-working girl who gets along very well with the other children and with the teachers. She is very mature and sensible, and she is in the best part of her class.

She has previously been very keen on gymnastics, but she has recently grown somewhat bored with them because she has been put into a group together with girls much younger than herself on account of her short stature.

She is a girl-guide, and she has many spare time interests. She goes in for pottery work, sewing and knitting. She likes to help her mother with the cooking, she plays handball, she reads a lot, and she loves to settle down cosily with the other members of the family. She is quite up-to-date in politics and current events.

She has never had any bosom girl friend, and she has never had many friends. The mother believes that she has the number of friends she really cares to have. She has no difficulties in making contacts with other children or with adults.

Her last two summer holidays she has spent privately quite a long way from home, and here too she has made several good friends.

The mother has the feeling that her daughter is normally developed; in certain ways she considers her mature for her age. She is very enterprising, helpful, conscientious, understanding and quite independent in many ways.

No. 22, Ruth, a 13-year-old girl with karyotype 45,X. Height: 134 cm

Ruth lives in a small town. Her father is a farmer, she has a 15-year-old sister.

She developed normally as a child. The mother says that she was a very happy, sweet and quiet child who was easy to manage, she never developed any real defiance period.

Relations with her parents and her elder sister have always been happy.

She is now in the first form of a Danish »realskole«. She has always been happy at school. She is average in her class. She is best at language subjects; arithmetic is the subject she is least happy about, but she scores quite good marks in this subject also.

She gets on well with the teachers, they like her very much because of her good and stable mood, and because she is so diligent and conscientious. She gets on fairly well with the other children, and there are several she is friendly with, **but she has no real friends who visit her at home. She has always stuck together with her elder sister, and her mother does not think that she really feels the lack of girl friends.** She is the shortest in her class (she is 134 cm tall), but she says that she has never been teased for this which, according to the mother, is most probably not true, but teasing because of her short stature does not seem to have bothered her very much.

The teachers describe her as a clever, hard-working, mature and independent girl. She is happy and friendly and gets on very well with the teachers and the other children.

In her spare time she does needlework, and she reads a lot. She also attends a night course in leatherwork. She swims, plays handball and gets a weekly lesson in piano playing. Her mother says that she is a very active, happy and satisfied girl who always has a lot to do.

She easily gets into contact with adults, and nearly all adults like her. She loves small children and talks a lot about how many children she wants to have and what their names are going to be. She is very careful with her work, and she is helpful and conscientious. According to her mother she is a very »good girl«, but she is immature for her age. The mother considers her approximately 2 to 3 years younger than her age as far as maturity is concerned. She is very sensitive and easily feels down and out by stress. She adjusts, however, quite easily to changes of any kind.

She wants to become a kindergarten teacher or a nurse when she grows up.

When Ruth was admitted to a paediatric ward half a year ago the parents were told that she lacked development of the ovaries, that she could not have children, and that she had to be treated with hormones in order to get menstruation and normal female development. This information was a shock to the parents, and they hope that they can keep it a secret from their daughter until she is grown up.

Interview with the 17-year-old sister, Pia, 14 months after the examination of Ruth

Pia is in the second class of the grammar school, she is doing fine, but she has no plans for further studies after getting her university entrance examination at the age of 18.

She does not think that there has been any great difference between her and her sister Ruth. Neither of them have had difficulties at school. They both get along very well with the other children as well as with the teachers, they are both in the best part of their class. Pia plays the piano like Ruth, and they have more or less the same spare time interests and spend quite a lot of time together. Both of them enjoy each other's company. They may quarrel, but they usually get along quite well.

Ruth has a greater need than Pia for physical contact with her parents as well as with the teachers. She is probably somewhat more extrovert than Pia, and it is easier for her to get into contact with others.

No. 23, Else, a 14-year-old girl with karyotype 45,X. Height: 140 cm

Else lives in the capital. Her father is an engineer, she has a 13-year-old brother and dizygotic twin brothers who are 9 years old.

She was a restless and fretful baby, but from the age of 1 year she was easy, sweet and contented. The mother thinks that physically she developed somewhat later than her siblings, but mentally she was earlier.

For the past few years her mother has had periodic depressions during which she is irritable and difficult to get along with. Concurrently she has had a great deal to do, she has a full-time job as a kindergarten teacher, besides which she takes care of her home and children without any help.

The eldest brother, who is 13 years old, is lazy at school, and the mother has to be constantly at him in order to get him to do his home work. The younger twin boys present behaviour problems at school, and this too has put quite a strain on the mother. She does not get much support from her husband, he is very preoccupied with his work and has never taken much part in the upbringing of the children.

Else has always got on well with her parents, she may sometimes bully her

younger brothers, but she gets on with them well enough on the whole.

She is in the first form of the »realskole«. She has always done extremely well at school, she is above her class average in most subjects. The teachers like her very much on account of her excellent mood, her helpfulness and diligence. She does her home work well without any pressure from the parents, and she has good order in her school work and in her things in general. She has several good girl friends at school, and there have never been any difficulties in making or keeping friends.

She has always been the shortest in her class, she has been teased to a certain extent for this, but it has never bothered her very much.

The teachers describe Else as a diligent pupil who is doing very well, she has the best possible relationship with teachers and other children, and her behaviour is excellent.

Since the age of 10 she has had very definite plans about her further education, and what she wants to become; she wants to take the university entrance examination, after that she wants to become a doctor, and she has also definitely made up her mind that she wants to become a surgeon. The parents have no idea how she got the idea about taking up medicine, but when she was little she often used to play that her dolls were nurses, she was a doctor, and they travelled around the world together. She was never very interested in what the dolls were wearing, but more in what they were doing.

She has many spare time interests, she goes in for gymnastics and swimming, she is a girl guide patrol leader, and she reads very much. She is not very interested in needlework or manual occupations of any sort, but she is very helpful and obliging at home.

The mother is convinced that her daughter has in a way been more mature and developed than other children of her age with regard to understanding others, tolerance and helpfulness. She pays great attention to her parents. When finances are not so good, she is very modest in her wishes. She may, for instance, refuse to have new clothes, saying that they are too expensive even if the mother knows that deep down she would like to have them.

In other ways she is childish and immature for her age. In this connection the mother says that it was not possible to make her do without her dummy before she was 5 whereas her brothers left off much earlier. She played with dolls till quite recently, and always talked very much with her dolls. She quite often talks to herself like smaller children. She is not very interested in going out together with other girls of her age, she much prefers to sit at home and read and enjoy the company of her parents.

The parents have been somewhat worried about their daughter's short stature, but their physician has told them that there was nothing to worry about, she would most probably start growing somewhat later than other children.

*No. 24, Helga, a 29-year-old single disability pensioner with karyotype 45,X.
Height: 144 cm*

Helga has always lived in the capital. Her father is a furnace man. She has two sisters who are 32 and 27 years old, respectively, and a 21-year-old brother.

She suffered from bowel disorder as a baby, and she was hospitalized most of the time till the age of 2 on this account. She was mentally and physically retarded when she was discharged from the hospital at the age of 2. After discharge she developed, however, rapidly mentally and physically, and in a matter of six months she was able to walk and talk. She developed according to age from that time. She was a happy, nice, extrovert and active girl, and the parents were convinced that her further development would be completely normal.

Relations with her parents and siblings are happy. The parents have been overprotective, and at the same time it appears that the parents, especially the father, have been quite exacting.

She started school at 7. She went to the same school till she was 12. She got on very well with the other children and with the teachers, but she was teased quite a lot on account of her short stature. She did quite well in reading and writing as well as in other subjects, except for arithmetic which she was not able to learn at all. She got a lot of extra teaching in arithmetic given by her parents and by teachers outside the school without much avail.

During the first years at school she had difficulties in seeing what was written on the black-board; it helped to a certain extent when she got glasses, but she was transferred to a school for partially sighted children. The parents as well as their daughter were very much against this transfer and tried to prevent it. Helga hardly learned anything at this school, and she stopped developing mentally; she became anxious to an increasing degree, and she had difficulties in getting to and from school. She was afraid of dogs and afraid of crossing the road. The father had to go to and from the bus with her.

When she left school at 14, she first got a job taking care of a baby in the neighbourhood. She was happy as long as the baby was very small, but when it became between 1 and 2 years old, she felt that the responsibility was too great and gave up. She then stayed at home helping her mother for a while. For one year she had a job in a cake factory where her mother was then employed, but this work never suited her. It was rather hard physically, and she had not the strength for it. She also thought it was a messy job, and she was teased by the other workers. She next got a job at a factory where she had a very simple job of putting bottles into boxes. She liked the job, and she liked the factory, most of the other workers were nice to her, but she never managed to learn any other working processes, and she was dismissed together with seven other girls after five months' employment because of reduced production.

At the age of 20 she was examined at a rehabilitation centre and referred to a

protected workshop making cardboard boxes. She stayed here for five years by the parents' wishes - she did not want to make them unhappy. She says that it was a very stressful period. She was never happy, and she was teased and annoyed in every possible way by the other workers. One of the reasons why she did manage to stay for five years was the fact that there was an elderly woman who protected her and took care of her. When this woman left, Helga gave up and left too. This was approximately three years ago, and it has not been possible for the parents to get her out of the house to look for any work since then. She hardly ever goes out without her parents, neither does she like to be left at home alone, except during the day time. She says that she feels happy, satisfied and protected at home, and she has no worries of any kind.

She has received a disability pension for the last three or four years. She is not interested in money at all. Her parents take care of her pension and buy what ever she needs.

She has a panicky fear and dislike of doctors, and she has told her mother that she does not want to cooperate in any more examinations, and not at all inside hospitals. When the mother agreed to the present visit by a psychiatrist and a psychologist in her home, Helga told her that this had to be the last time; if she allowed any more physicians to visit her, she might commit suicide. The mother says that she does not think that this threat is a serious one.

She has never suffered from any actual depressions, but she has been dysphoric due to external stress. She has never presented any psychotic symptoms. She has always been very anxious at anything new and unknown.

She has occasionally talked about the possibility of getting married, but she has not shown any great interest in boys, she has never had a friend, and there has never been any suggestion of a boy being interested in her as far as the parents know.

She is interested in what happens around the world, she reads two newspapers every day, she watches television and listens to the radio. She often discusses things with her parents, especially with her father. She has her definite ideas about many things. She can be quite tough in discussions with her father and is able to find what he calls his sore points, something that both irritates him and makes him happy.

The parents find it very wearing always to have their daughter around them. Their only possibility to be alone is to send her to one of her sisters, but she never wants to stay there for more than one day and not at all during the night if the parents are not there.

She has received cyclic hormone treatment since she was 15 and until approximately three years ago. During hormone treatment she developed very fat legs, a condition which has bothered her quite a lot. She never felt any better during hormone treatment, quite the contrary she felt »blown up«, and she gained weight. This stopped when the hormone treatment was discontinued two years ago. She has not had menstruation since, but this does not bother her. The

parents think that she has become more lively and interested in what is going on around her since the hormone treatment was discontinued.

No. 25, Randi, a 27-year-old single kitchen help with karyotype 45, X/46, X,i(Xq). Height: 150 cm

Randi grew up in a provincial city and is still living there. Her father has a grocer's shop; she has a 25-year-old sister.

The mother has overprotected both daughters, but especially Randi. Randi developed normally during childhood, except for the fact that she was the shortest and most obese girl in her class.

She was in a hospital for nearly a year suffering from osteomyelitis in her left ear, and several operations were performed. Her hearing was decreased prior to this affection, but secondary to the operation hearing ability on her left ear is almost nil.

While in hospital she became a compulsive eater and gained tremendously in weight. Owing to the hospitalization she did not start school till she was 8. She left school after the compulsory seven years. She was never happy at school, she was constantly teased during the whole of her school life because of her decreased hearing, her obesity and short stature. The teasing was mainly due to her obesity and decreased hearing.

She always had a couple of girl friends at school, and she always got on well with the teachers. She was, according to her own and the father's information, a very hard-working and conscientious girl, whose mood was good and stable in spite of the teasing. She was slightly below average in all subjects, and she had to study hard.

The teachers describe Randi as a hard-working and quiet girl, who did her best to do her school work. Her behaviour was excellent. She was a friendly and helpful girl.

She had no special spare time interests as a child, she played handball a little, she collected pictures and stamps, and she read occasionally, but there was nothing in which she was particularly interested.

After leaving school at the age of 15, she helped in her father's shop for some months and was then employed in another grocer's shop for six months, but she had some difficulties. She was in domestic service for three years in one situation and for one year in another. She found the work congenial, and she enjoyed taking care of the children.

She worked as a kitchen help at a day nursery for five years, she liked the work, but left because she was so poorly paid. She actually took the job as a preliminary qualification for training as a children's nurse, but she never got the courage to start, she was afraid her decreased hearing would be too great an obstacle.

Half a year ago she found employment as kitchen help at an institution for

mentally retarded where she still is. She is happy in the job, she gets on well with several of the patients, and she is thinking of training to become a nurse for mentally retarded. She is, however, somewhat worried about the difficulties attendant on her decreased hearing.

She has never had any difficulties in making contacts, and she has always got on well with the people she works with. She is, however, somewhat shy and reticent towards strangers and at parties. Like her mother she is very helpful and obliging, and she thinks that her mood is good and stable. She does not consider herself very hasty, but she may, on occasion, fly into a temper like her father. She is not especially sensitive, not nearly as sensitive as the mother and sister.

She considers herself to be as mature as her girl friends of her own age. She had her first boy friend at the age of 17, and she has had a boy friend most of the time since then. She was engaged to a young man for two years, and she now has a 24-year-old boy friend whom she has known for the last one and a half years. They are planning to live together and later to marry.

She tells hesitatingly, her manner insecure and shy, that she is somewhat slow in getting orgasm, and she prefers petting to coitus. She does, however, get some satisfaction out of coitus if the introduction lasts long enough. Her friend is quite satisfied with their sexual relation. She herself, however, is not quite satisfied, she would like to know if there might be some connection between her difficulties in getting orgasm and the fact that her ovaries are undeveloped.

She has been given cyclic hormone treatment since the age of 18, and menstruation is regular without complications. She does not think that the hormone treatment induced any change in her general condition, except for the development of secondary sexual characteristics.

She agrees to continue hormone treatment, but she does not think that menstruation is of any special importance for her in view of the fact that she cannot have children.

She has taken weight reducing tablets and has recently lost 13 kg in consequence. She was tired and irritable during this treatment, but very happy to have lost the 13 kg.

Interview with the 26-year-old married sister, Nora, six months after the examination of Randi

Nora left school at 14, she was tired of school, but she has since regretted leaving so early. She had no difficulties at school, but she never worked very hard, and her results were poor. She was popular, and she was the one who organized parties at home. She often did things for her elder sister, Randi, because the latter was so very slow and meticulous. At school, and also outside school, she often had to protect her elder sister, Randi, and beat up children who teased Randi because of her short stature, obesity and decreased hearing.

The parents were extremely overprotective towards both girls, but more so

for Randi who is still treated like a child by her mother.

Nora says that her elder sister Randi has always been quite different from her; compared with herself she was restless, and until she was 6-7, somewhat difficult for the parents to manage. From this age Randi became a nice, quiet, extrovert, happy, very feminine and well behaved girl, and she herself became a very active, somewhat aggressive, restless, boyish girl.

Nora worked as a shop assistant till she married at the age of 19 and stopped working. She was divorced at the age of 21, and since the divorce she has been employed as a clerk. Her marriage was broken up mainly due to the fact that her mother constantly interfered in her marriage and wanted to make even minor decisions. She did not really realize this until she was divorced, and she then broke off relations with her mother for a while. Her divorced husband has come back to her, and they are living happily together. They have a 6-year-old healthy daughter.

Nora says that her elder sister Randi, in her opinion, has always been somewhat mentally immature, naive and easily exploited, but she is happy, quiet, conscientious and hard-working.

It is her impression that Randi has suffered quite a lot from the parents', especially the mother's, overprotection. She would have been much more mature and able to make her own decisions if her parents had left her more alone. She admits that she herself, to a certain extent, also overprotected her sister by doing things for her.

Randi has had two boy friends; the present one is exploiting her because she is so good, somewhat naive and so easily influenced.

No. 26, Sanne, a 20-year-old single university undergraduate with karyotype 45,X. Height: 148 cm

Sanne grew up in the capital, and she still lives there. She has never known her biological father. Her parents were divorced when she was 3 years old. She has an 18-year-old sister.

Relations with her mother and her stepfather have always been good, and she considers her childhood good and happy in spite of the fact that she does not remember her father. Her relations with her younger sister are good, but her sister is considerably more extrovert than she is.

She developed normally as a child, except for recurrent inflammation of the middle ear. At the age of 3 she was, however, admitted to a paediatric ward, for a reason unknown to her.

She has always done well at school, and she had no difficulties in any of the subjects. She took her university entrance examination at the age of 19 with the highest marks in her class.

She was not teased at school. She got on well with the other children and with

the teachers, she always had several good school friends, but she never had much to do with them outside school.

The teachers describe her as an intelligent and extremely hard-working and conscientious girl. Her relations with the other children and with the teachers were excellent.

She spent a great deal of time over her school homework, she was diligent, conscientious and her written work was neat; she always had a great many spare time interests. She has gone in for dancing, gymnastics, drama and jazz ballet as well as riding.

She has been studying for a university degree since she left school at 19 with French as her main subject and Russian as her subsidiary, with the intention of becoming a grammar school teacher. She has passed the first part of her examination in French with good results. She studies hard; she lives at home free of charge, and she considers herself quite privileged in that she is not obliged to work in order to earn money for her studies.

Her mood is good and stable, and she does not think that she is remarkably sensitive. She is somewhat shy and reticent towards people she does not know, but she adds that deep down she is a real »chatterer« who loves the company of people with whom she is familiar, and with whom she feels secure. She has always felt overlooked by men; she has never had a boy friend and has never had sexual relations, even though she has occasionally felt the desire. It worries her, however, that she feels attracted to a man so comparatively rarely, and in this connection she says that she is probably too critical and exacting. She hopes, however, to find the right man and to marry him some time in the future.

She knows that she cannot have children. She loves children very much, and she has made up her mind to adopt children when she gets married.

Interview with the 19-year-old single sister, Rikke, 11 months after the examination of Sanne

Rikke was quite late in talking correctly and was referred to a speech therapist for training. She did not start school till 8 on account of her speech difficulties. She passed the school-leaving examination of a »realskole« with average marks. She did not work very hard, and Sanne was much neater and more diligent. She was not so popular as Sanne, who has always been such a sweet, nice, helpful and conscientious girl, liked by all. She herself is much more temperamental than Sanne, and she is more restless. After leaving school at 17, she was in domestic service for a while. She wanted to become a nurse, but gave up the idea and was employed for a few months at a youth centre. She later found employment at a day nursery for some months, toying with the idea of becoming a child welfare teacher, but she decided this would be emotionally too much for her, and she is now a photomodel.

For the last two and a half years she has been living with a 26-year-old friend. Their relationship is tempestuous, sometimes they separate, but always to return, as they cannot do without each other. In this connection she says that she has tried to explain her relationship with her friend to Sanne, but Sanne does not understand it, and cannot accept such a relationship at all – for her a relation with a man should be romantic and stable. She does not see much of Sanne as they have very little in common. Sanne has very few friends, but she has some really good friends, whom she will keep forever and never let down. Rikke describes herself as more superficial, but she has plenty of friends and acquaintances.

No.27, Mary, a 16-year-old girl with karyotype 45,X. Height: 130 cm

Mary grew up in the capital and still lives there. Her father is a transport worker. She has a 20-year-old brother and two sisters who are 19 and 16 years old, respectively.

She developed normally during childhood, except for shortness of stature. The mother does not think that there was any remarkable difference between her physical and mental development and that of her three elder siblings. She suffered, however, quite often from inflammation of the middle ear, and she has attended a dermatological clinic several times for psoriasis.

Her relations with her parents and siblings are good.

She has always been happy at school, and she is doing well in all subjects. She has chosen the domestic line, mathematics and typewriting for her voluntary subjects.

The mother describes Mary as diligent, conscientious and neat, she always gets good marks, and she is in the best half of her class. The teachers like her very much, and she has always had many friends.

She takes active part in the school theatricals as well as in general school activities. She has changed school recently, and she quickly adapted to the new surroundings. She has never been teased very much, except for remarks from the boys concerning her short stature. She always answers back, and she does not consider these remarks as teasing.

The teachers describe Mary as a remarkably hard-working girl with good abilities and with a great interest in drama and creative activities. Her behaviour is excellent and so are her relations with other children and the teachers.

She has decided to leave school after the 10th year and then spend a year helping her maternal grandmother with the housework. She wants to become a state registered children's nurse. She says that she loves children, and she loves to help other people. She speaks about her future plans without any doubt or hesitation.

The mother says that Mary is »a hard-working little thing«, she is good at

housework. She often scolds her elder sisters and brother for not giving a helping hand and tidying up after them to the extent that she thinks they ought. She is quite precocious, she loves to talk to the mother in a grown up fashion. Her mood is good and stable, but she is probably somewhat more hot-tempered than her siblings. **She is extremely active, something has to happen all the time. She is good with her hands, but she also reads a lot.**

She is not so interested in boys as other girls of her age, and for the last couple of years she has had a tendency to have girl friends, who are a couple of years younger than herself.

She is 130 cm tall and has only grown a couple of cm during the past year. Her short stature is, however, no great problem.

Interview with the 17-year-old sister, Gerda, 11 months after the examination of Mary

Gerda says that her father to a certain extent has spoiled and overprotected her sister Mary, a fact that has irritated her and her siblings. If Mary does not get what she wants, she becomes quite hysterical.

Gerda thinks that she has always been more active than Mary who has never gone in for any sports. Gerda is still active in sports, she is planning to become a gymnastic teacher. Mary has always been more interested in quiet, indoor activities; she still plays with dolls, a fact Gerda is somewhat ashamed of.

Gerda left school from the 9th class at the age of 16, and she is an apprentice at a store which she does not like at all. She had great difficulties in arithmetic at school like her elder sister. She was below average in her class like her elder sister, while Mary and the brother were among the best in their classes. Mary has worked much harder than her two sisters. She has always been very popular at school, and she has had many friends.

Mary is not yet interested in boys, she has started talking about them, but she has had no boy friend yet. Gerda began to menstruate at the age of 12 and had her first sexual relation at 13. She had great difficulties during puberty; she was irritable, dysphoric and difficult to get on with, and she still suffers from periods of dysphoria. She is very much looking forward to being able to start training to become a gymnastic teacher.

No. 28, Lucia, a 23-year-old married clerk with karyotype 45,X. Height: 146 cm

Lucia grew up in the capital and still lives there. Her father is a tool maker. She has a 26-year-old brother.

Her relations with her parents and her elder brother have always been happy.

She had oedema of the backs of her feet at birth, but she developed normally, physically and mentally, and, except for her short stature, not so very differently from her brother.

She started school at 7 and left at the age of 17. She was always the shortest in her class, and she was teased by some of the boys, but it never bothered her very much. She has always had good friends and always got on well with the other children and the teachers. She had no difficulties at school. She was good at languages, but she was somewhat slow in learning arithmetic and mathematics. She got her school-leaving examination of a »realskole« with an »8« and was among the best in her class.

The teachers describe Lucia as a very hard-working and positive student. She was of average intelligence and well liked by everybody.

After leaving school at 17, she served a two and a half years' clerical apprenticeship. She was not very happy because her superiors were very exacting, watching out for the slightest mistakes, she might make. This caused her some nervousness, and at the age of 19 she consulted a psychiatrist who treated her with sedatives with good results. At that time she also had problems with a boy friend.

Lucia has a good commercial diploma, she has been attending a night course at the Commercial High School for the past two years, studying English and German correspondence, and she hopes to take her examination as a correspondent this summer. She has worked in the same office for the past three years, working half-time only for the past six months because of her language studies. She hopes to be employed by her present firm as a half-time correspondent after having taken the examination later in the year.

She has been having cyclic hormone treatment since the age of 14, and since then menstruation has been regular. She has been interested in boys since the age of 14-15, and she had her first boy friend at the age of 15. She was engaged for two years from 18 to 20, but she broke off the engagement because of her fiancé's condescending attitude towards her.

She met her present husband, who is a salesman, two years ago, and they have been married for six months. The marriage is happy, they love each other, and they have many interests in common, they help each other, and their sexual relations are good. She has had no difficulties in sexual relations; she is aware that her chances of getting children are very poor. They have agreed to apply for adoption, they wish to adopt at least one, if not two, children.

They have their own house and are in good financial circumstances. She has several spare time interests, she goes in for dancing and gymnastics, she has played badminton, and she has belonged to a music group. Both she and her husband go in for yachting, and she likes to sew, knit and read.

Her mood has always been good and stable, she is quiet of temperament, she may be somewhat sensitive. She has always been diligent and conscientious with her work, and she likes to help other people.

No. 29, Ghita, a 23-year-old married clerk with karyotype 45,X. Height: 148 cm

Ghita grew up in a provincial city where she still lives. Her father is a carrier. She has a 25-year-old sister.

She suffered from bowel disorder as a baby and spent her first six months in hospital. Following discharge, she developed normally, physically and mentally, except for growth retardation. She could, however, not walk until she was 2 years old, but she thinks herself that this was due to her set-back on account of the bowel disorder.

Her relations with her parents and her elder sister have always been happy. Her parents supported her in every possible way; they showed great understanding and told her all they could about her disorder.

Ghita left school at the age of 15. She did very well, and she liked school and got on well with her teachers. She was average in her class. Her best subjects were Danish, foreign languages and arithmetic. She had some difficulties in writing. Sports gave her some difficulties on account of her short stature. She had several good girl friends, and she always got on well with the other children in her group. She was never teased, but some of the children made remarks about her short stature; she was, however, always able to answer back and never considered such remarks as teasing.

She was a girl guide for five years, she was drummer in the girl guide band, and on two occasions at school camp, she won a prize as the most popular girl in the camp.

The teachers describe Ghita as a girl who did splendidly in all subjects. Her behaviour was good, and she got on very well with the other children as well as with the teachers.

After leaving school at the age of 16, she served an apprenticeship in a shoe shop. She liked the apprenticeship and did well. However, having completed her term, she left and took up employment in the cheque department of the post office for two years. She liked the work, but too much compulsory over-time caused her to leave on marriage. For the past three years, she has been happily employed as a clerk in a firm where the work is congenial and the conditions good.

She has been receiving hormone treatment since the age of 14, and menstruation has been regular without complications.

At the age of 15, her parents told her that she would not be able to have children, and that her ovaries were not developed. She was also told that she would be late in developing secondary sexual characteristics. At around the age of 17-18 she had developed quite satisfactory secondary sexual characteristics, including mammary development. From the age of 15, when she was told about the fact that she could not have children, and until she met her present husband at the age of 18, she often used to be worried about how she would develop, and if she could ever become a normal woman with normal sexual relations. She

thought there might be a connection between the fact that she did not have ovaries and her sexual capacity as a woman. She tried sexual relations with several boys, but she did not get anything out of it, and in this connection she says that it should be important to tell girls with Turner's syndrome about the fact that, as I have told her, they are perfectly normal in their ability to have sexual relations, and that this has nothing to do with the fact that they cannot have children.

At the age of 18, she met her present husband. They married when she was 19. The marriage is very happy, they have many common interests, they love each other, they get on very well together, and their sexual relations are good with full satisfaction for both.

They have recently bought a house, and at the moment they are busy with the garden. They help each other inside the house as well as outside, and she has no difficulties in working full-time at the office as well as taking care of her house because she and her husband do the work between them.

They both love children, and they applied for permission to adopt a child immediately after they were married. Permission was soon given, and they were told that there would be good possibility for them to adopt a child in a matter of eight years. They have still five years left, but they are sure that they will get the child before they are 30, and this is quite satisfactory for them both.

Ghita says that she considers her mood is good and stable. She is quiet and well-balanced, and she is not especially temperamental or irritable, and she considers herself mentally healthy. It is easy for her to make contacts, and she has several good friends.

No. 30, Jean, a 27-year-old single bank clerk with karyotype 45,X/46,X,i(Xq). Height: 150 cm

Jean grew up in a provincial city where she still lives. Her father is a detective inspector. She has a 31-year-old brother.

She was a puking, fretful baby who, until she was a year old, kept her parents awake day and night. From then on she developed quite normally, except for retarded growth.

Her relations with her parents and brother are good. She owns a house together with her parents and lives in a two-room-apartment in this building.

She was teased a good deal during her first years at school because she was short of stature, but she never complained about it. She always got on well with the teachers, and she was neat and conscientious, helpful towards the others and among the best in her class. When she was 14, mathematics gave her some trouble, and extra tuition was necessary. She worked very hard as she has always been very ambitious and has had a good opinion of herself. Her relations with the other children at school were always good, but she was rather reserved, she usually had only one girl friend at a time and never any bosom girl friend.

The teachers describe Jean as a quiet, friendly and nice girl who was rather reserved and slow. Her behaviour was satisfactory, and she got on excellently with the other children and with the teachers.

She does not feel lonely, she has always enjoyed working on her own and working intensively with whatever interests her. She says that she usually prefers to talk with older and more sensible people. She felt, especially when she was younger, that people of her own age were too childish and superficial, and she has never enjoyed going out with other young people.

She actually wanted to become a physician because she was eager to help others and to do something for others, but she gave up the idea on account of her short stature, and also to a certain extent, because she was afraid of a recrudescence of polyarthritis from which she had suffered for a short period at the age of 10. She next considered becoming a hospital nurse or a laboratory technician, but these ideas, too, were given up for the same reasons. She chose a bank training because this work has something to do with other people. She has been employed at the bank for the past eight years, she likes her work very much, and she has gone in for several courses: Business school, bank school, a two-year-correspondence course in banking and a two-year-course in languages at the Commercial High School. She has been studying at the Commercial High School for a higher business diploma and is now studying law at the university. She says that she has enjoyed getting further education by taking different courses; she has become more mature and more sure of herself on this account.

She has many spare time interests. She is interested in needlework and music, she plays the piano and goes in for ski-ing and swimming.

She has received cyclic hormone treatment since the age of 14, and menstruation has been regular since. She considers that her puberty was normal and like that of her girl friends. She developed secondary sexual characteristics at the expected time, and she is quite satisfied with her development. At the age of 19 she was told about her chromosome aberration and the fact that she cannot have children. This possibility had already occurred to her, and the information was not very shocking, but she was sad about it as she loves children very much. It is her plan to try to adopt children when she gets married. She is quite sure that she will marry, even though she has never had a boy friend and never had any sexual relationship. She is very critical in her choice of a husband; she has occasionally been in love, but her feelings have usually not been requited.

Her mood is good and stable, she is hard-working, obliging and conscientious. She considers herself somewhat sensitive and hot-tempered.

At the age of 10 she got polyarthritis in her ankles and knees. She was admitted to a paediatric ward and treated with Cortison preparations for a couple of months. She has never had any signs of polyarthritis since then. She has had psoriasis since the age of 16, and she has been treated with Steroid ointment. She has nearly constantly psoriasis on her elbows, stomach, hands and scalp.

Concerning her stature (150 cm) she says that it does not really bother her very much. She does not consider herself abnormally short of stature. She is quite happy and satisfied with her occupation and her life as a whole, but she sometimes thinks that it might have been better if she had become a physician.

No. 31, Mona, a 22-year-old single trained children's nurse with karyotype 46,X,i(Xq). Height: 137 cm

Mona grew up in the capital, and she still lives there. Her father is a car park attendant. She has a 20-year-old brother.

Her relations with her parents have always been good. She states that her mother is somewhat sensitive and nervous, and that she once had a nervous breakdown and attempted suicide.

Mona ate little and vomited much as a baby. She suffered from inflammation of the middle ear at the age of 2, and she has hardly any hearing on her left ear which troubled her, especially at school.

She began school at 7 and was transferred to a special class at 8 on account of dyslexia. She was well adjusted and got along very well with the other children in her class as well as with the teachers. She had several good girl friends, and she has kept up with one of them. She had difficulties in writing correctly and still has. At school she was diligent, neat and careful.

The teachers describe Mona as a quiet, thoughtful girl with good powers of concentration. Her behaviour was good. Her consideration for others and good common sense made it easy for her to get on well with others.

After leaving school at the age of 18, she went to a folk high school for the following six months. She then worked at a kindergarten preparatory to training to become a children's nurse, which training is now nearly completed. She has recently obtained employment at a kindergarten to begin in a month's time. Her training was paid for by the rehabilitation centre to which she was referred from school on account of her short stature and dyslexia.

She has never had very many spare time interests, she does not read very much, she never went in for sports, she goes occasionally to the movies together with a girl friend, and on occasion they go out dancing. She visits her parents quite often.

She was examined the first time at the age of 12 on account of her growth retardation. Menstruation was never spontaneous, and the development of secondary sexual characteristics did not start till after hormone treatment from the age of 18. A gynaecologist recently discontinued the hormone treatment, and since then she has lost weight and become more tired, and she would very much like hormone treatment to be resumed. She has not been told very much about her disorder; she knows that she has hardly any chance of getting children. She has been thinking of adopting a child when she gets married.

She has had no boy friend and has not had sexual relations. She left home half a year ago, and she is happy to live alone in a one-room-apartment.

She has always been somewhat shy and reserved, but when once she gets to know people she feels at ease and gets on well with them.

Her mood is usually good, but there may be brief dysphoric periods without definite cause. She is not very hot-tempered, but she easily gets sulky and offended which, however, quickly passes over. As a rule she is quiet and well balanced, she never feels nervous or anxious. She likes to be tidy, but she does not think that she is perfectionistic. She gives an impression of being helpful and conscientious.

She is sad that she is only 137 cm tall, and she hopes that she will still grow a couple of cm. She does not consider her short stature very much of a handicap for her work as a children's nurse, and she has not been exposed to discrimination on account of her short stature.

No. 32, Elisa, a 21-year-old single bookbinder with karyotype 45,X/46,X,i(Xq)/46,X,i(X)(qter→p11::p11→qter). Height: 151 cm

Elisa grew up in the capital where she still lives. Her father is a shipwright. She has two sisters, 24 and 14 years old, respectively.

The whole family, including the elder, married sister, lives in a two-storeyed building containing two flats. Elisa's relations with her parents and sisters have always been good, but she appears to be somewhat overprotected.

Elisa developed normally as a child, except for a mild attack of tuberculosis at the age of 2 and inflammation of the middle ear at the same age.

She left school at 16. She was happy at school, but she never had any idea of continuing. She was diligent and slightly above average in her class. She got on very well with the teachers, and she always had a number of school friends. With one very close friend she has kept up. From the age of 11 till 15 she was teased by some of the other children because she was so short of stature, but it never really bothered her very much.

The teachers describe her as a pupil who did well at her lessons, and who got on well with the other children and with her teachers.

After leaving school at the age of 16, she became a bookbinder's apprentice at her own wish. She finished the apprenticeship with no difficulties, and she has been employed as a bookbinder in two or three firms since. She has been in her present employment for a couple of years. She finds it congenial and gets on well with everybody. Bookbinding can entail heavy physical exertion, and she is often very tired when she gets home. Nevertheless she plans to keep on at it. She is engaged to a 27-year-old mechanic, and they are building a house together and planning to move in during the summer. She has known her fiancé for nine months, and they have been engaged for six months. Their relations are happy, and they have no sexual problems.

From the age of 17 she has been given cyclic hormone treatment, and menstruation has been normal during this treatment.

Elisa developed secondary sexual characteristics shortly after hormone treatment was instigated at the age of 17, and she is quite satisfied with her present state of development. She is 151 cm tall, she thinks that this is within the normal range. She is not exposed to discrimination because of her stature, and she has not been so since she left school.

She has never had very many spare time interests, school work took relatively long time, she played a little handball, and she read some books, but at present all her spare time is spent on the house which she and her fiancé are building.

Her mood is most often good and stable, but there may be dysphoric periods lasting two or three days and appearing without any definite cause. There may also occasionally be short periods with excitement. These changes in mood can be quite troublesome, they were also present before hormone treatment was started, but they are most pronounced prior to and during menstruation. They have never prevented her from going to work.

She is somewhat passive, shy and reserved which bothers her. She has always had a couple of friends, and she never feels lonely. She thinks that she is quite sensitive, but she is always able to talk with others about her problems, and she never broods on them.

Interview with the 25-year-old married sister, Nanna, nine months after the examination of Elisa

Nanna left school from the 8th class. She was tired of school, but she regrets that she left so early. She did fairly well at school and got on well with the teachers and with the other children.

Nanna says that the mother paid more attention to Elisa on account of her growth retardation, but she was not overprotected. Elisa probably developed rather more slowly than her sisters. She was a quieter child than they had been, preferring quiet, peaceful, indoor games, whereas they had been boisterous children playing out-of-doors. They both used to play quite a lot with boys which Elisa never did. Nanna is under the impression that her sister Elisa was probably somewhat jealous of her two more active sisters, everything was so much easier for them, and they did not work so hard at school as Elisa, but Elisa managed at least as well as they did because she was diligent, neat, steady and conscientious.

After leaving school Nanna worked for a few months at a store and then got an apprenticeship as a bookbinder. She broke the apprenticeship on her marriage at the age of 16. For the past two years she has had work at a factory. She finds it congenial and is well adjusted both in this and in her marriage. She has three children, the youngest is 3½ and the oldest is 8. She and her husband live in a flat in the same building as her parents, and everybody gets along well

together. The mother is helpful, but not interfering.

No. 33, Asta, a 16-year-old girl with karyotype 45,X. Height: 141 cm

Asta grew up in the capital, and she still lives there. Her father is a departmental manager. She has a 14-year-old brother and a 5-year-old sister.

Her relations with her parents and siblings are very good. She considers her childhood to have been happy.

For the first five months, she was a very fretful baby, mainly due to stomach ache. She had frequent vomitings, and she stayed at a children's hospital for six months from the age of 5 months till the age of 11 months. The hospital diagnoses were chronic dyspepsia and inflammation of the middle ear.

She is now in the second form of the »realskole«. She says that she has always been happy at school, and she does well. She is slightly above average in her class. She has some difficulties with languages, but no difficulties with mathematics. She gets on very well with the other children, and she has several good girl friends who often visit her at home. The teachers like her very much on account of her diligence and the neatness of her written work and for her good and stable mood.

The teachers describe Asta as a clever, hard-working girl who does well. She works somewhat slowly, especially when confronted with new material, but her diligence and thoroughness help her to achieve a solid performance. In class discussions she often takes her stand and creates respect around her. She is popular with the teachers and other children. She has been teased somewhat on account of her short stature, but she has always defended herself in a charming and clever way.

Five years ago it was her intention to become a kindergarten teacher, but she considers this to be too ordinary, and at the age of 11 she decided to become a school teacher. Her future must be connected with children and teaching, and this is still her intention. She hopes to be able to get the university entrance examination, and she is well aware of the fact that she needs quite good marks to get into a training college. Her physician has told her that her decreased hearing might give her some difficulties in this respect. She has had a hearing aid, but found it unsatisfactory.

She has always had many spare time interests. For the last couple of years she has gone in very active for rowing, she goes to the club nearly every day, and she also goes in for jazz ballet in the winter as well as for swimming.

The mother says that Asta is very active. She often has difficulties in finding time for all her activities. She is quite helpful at home and in general. She has always been what her mother calls precocious and very sensible and thoughtful. She is extrovert, and her mood is very good and stable. She had, however, some difficulties when she changed school a couple of years ago, but this did not last long, and she is now well adjusted at her new school.

Apart from illness when she was a baby, she has always been healthy. The mother says that Asta has hardly ever been kept at home from school on account of illness.

At the interview she answers the questions rapidly and precisely. Her hearing is decreased, and it is evident that she uses lip-reading. She cannot quite follow my conversation with her mother when I speak in a normal tone. She is quite irritated and dissatisfied when the mother breaks into our conversation. She is of normal intelligence and mature according to age.

No. 34, Maud, a 16-year-old girl with karyotype 45,X/46,X,i(Xq). Height: 141 cm

Maud grew up in a provincial city where she still lives. Her father is an assistant, her parents were divorced a year ago. She has a 17-year-old sister and a 14-year-old brother.

In infancy her development was normal and very similar to that of her two siblings. Her relations with her mother and her siblings are very good, and before the parents' divorce she had also a good relationship with her father.

She began school one year later than the usual age, that is when she was 8, on account of her immaturity. She was considerably more immature than her siblings. She is now in the 9th class, and she likes school. She is doing quite well in all subjects, she is average in her class. She has some difficulties with Danish on account of a slight word-blindness. She also has some difficulties with arithmetic. She has only a few girl friends at school, and none of them visit her at home. She has been teased somewhat because she is so short and fat and the smallest in her class.

The teachers describe Maud as a girl whose behaviour is excellent. She gets on well with the other children and with the teachers. She is doing well in spite of the fact that she is shy and has often been absent on account of illness.

She would like to lose weight, but the mother says that she is not prepared to give up eating between meals or to take exercise. She prefers to stay at home and to have a cosy time with her mother or play with the neighbour's small children. She often babysits at night, and she also takes care of some children during the day. The parents of these children have full confidence in her ability to take care of their children. She is very sensible and responsible, and she loves children. She has decided to take the 10th year at school and then to spend a year in domestic service preparatory to training as a children's nurse.

She has had no spare time interests, except for taking care of children, reading a little and doing some needlework. During the past two years she has, however, attended a night course on the care of children and on photography. She used to play volleyball at school, but she has not gone in for any sports since. The mother tries to activate her, among other things, by suggesting that they should

go out running together in the near-by forest, but it is very difficult to persuade her to any form of physical exertion. The mother also urges her to go out with her girl friends, but she is not very interested. She may occasionally go to the movies with a girl friend, but it is usually her mother who goes with her.

The mother says that Maud's mood is good and stable, but she is somewhat hot-tempered and sensitive. She has always been somewhat precocious, she prefers sensible conversation with adults instead of the society of children. She has no difficulties in making contacts with adults or with small children, but she has some difficulties with children of her own age.

Interview with the 18-year-old single sister, Hilda, nine months after the examination of Maud

Hilda left school with the school-leaving examination of a »realskole«. She says that she was quite different from her sister Maud. Maud works much harder at school, she is more conscientious and more careful with her work. Hilda had great difficulties in arithmetic, she was not happy at school.

Maud is doing better at school at the present time than at the time of the interview nine months ago, and she has also more outside activities than before, she has completed two courses in child nursing, she has been working at a kindergarten and a nursery for a month.

Hilda worked as a domestic help for a while, and then she worked at a book store for a few months, but she gave it up as the work did not appeal to her, it was tedious and strenuous. She is now studying at a business school. She likes it to a certain extent, but she considers it quite hard. She has had to give up most of her spare time interests, and she has lost some of her friends on this account. She is, however, planning to go on studying in order to become a correspondent. Her mother states that during the past year she has often appeared tired and somewhat dysphoric.

Hilda considers herself more hot-tempered than Maud, and she thinks that she has had greater psychological difficulties than Maud. Hilda says that Maud has usually been treated according to her age and not according to her stature, but the mother has probably overprotected Maud to a certain extent on account of her short stature and the fact that Maud has been more tied to her than her other two children.

No. 35, Stina, a 28-year-old married clerk with karyotype 45,X/46,X,inv(Y)(p11q11). Height: 149 cm

Stina grew up in the capital and still lives there. Her father was an unskilled labourer. She has three sisters, 36, 34 and 22 years old, respectively.

Development during infancy was normal, but from the age of 6, she has always been smaller than other children of her age. She liked school, her best subjects were history and Danish; she had some difficulties in arithmetic. She made very little effort, and her written work was carelessly done, and she says that she did not really start studying till she reached the top form of the »realskole«. She was very tired of school at the age of 14-15, but the mother insisted on her staying on for the leaving examination of a »realskole« at the age of 17.

At school she always got on well with the other children, she was called »Pet«, but she was never really teased for her short stature. She always had at least one very good friend at school, and she has still kept up with one of them.

The teachers describe Stina as a quiet, reserved and somewhat shy girl with good abilities at school. She was diligent, and her behaviour was excellent.

It was always the mother who made the decisions about more important things in the home. The mother is described by Stina as being sensitive and hot-tempered. Stina, however, gets on very well with her mother as well as with her siblings.

After her school-leaving examination of a »realskole« at the age of 17, she worked at an office for 10 months; she left and took a year's training as a children's nurse, and was then, for approximately one year and a half, employed at a day nursery and a kindergarten. She chose this subject partly because she loves children, but also partly because her elder sister was a children's nurse. She gave it up because it was so hard for her to part from the children under her care, she loved them as if they were her own. She had also difficulties in accepting the sad fates of many of the children in the institutions where she worked.

She took a refresher course in office work and has worked as a clerk since then. For the past three years she has had a clerical appointment at the Scientific Faculty at the University of Copenhagen. She is quite satisfied with her work which is not very exacting. She likes to spend most of her time and strength on her home and her husband.

She was given cyclic hormone treatment from the age of 17 until she discontinued it on her own accord a year ago. During hormone treatment menstruation was regular. She has developed breasts and more pronounced secondary sexual characteristics, but she has not felt any different during hormone treatment or after discontinuing it. Menstruation has no meaning for her. There has been no change in her sexual libido after the discontinuation of hormone treatment. She agrees, however, to resume it.

She has been married for two and a half years to her present husband, a typographer; the marriage is happy, they have interests in common, and their sexual relations are good. She says that she felt somewhat shy and insecure about sexual relations during the first months of marriage as she did not get any satisfaction out of it, but she has no sexual problems at present. It is her impression that both she and her husband get full orgasm. Her husband has known all the time that she cannot have children. They have talked quite a lot about adopting

a child, and Stina would like to apply for adoption, but her husband is hesitant about the responsibility, and he points out that for the time being they are happy as they are. They live in a good apartment, and their financial circumstances are good. They go for holidays abroad every year and have several good friends.

Stina says that she considers her mood stable, but she has previously had dysphoric periods, such periods are, however, seldom now. She does not think she is very sensitive, but she nevertheless tells how she easily gets hurt, and that she quite easily becomes hot-tempered and impatient. She has no great difficulties in making contacts, and she has several good friends. She is, however, somewhat shy and reserved when she has to meet new people. She considers herself somewhat more immature than most women of her age.

Interview with the 37-year-old sister, Erna, eight months after the examination of Stina

Erna liked school, but she left school at the age of 16 before getting any exam as planned because she was teased very much during the last couple of years owing to the fact that she had become fully developed as a woman at the age of 14.

After leaving school, she got an apprenticeship at a store where she worked till the age of 22. At that age she took a clerical course, and since then she has had clerical employment with intervals in connection with childbirths. She is happily married and has three daughters.

At the age of 18 she was admitted to a psychiatric hospital on account of what appears to have been a psychogenic depression in relation to stressful working conditions; she recovered completely in a few months. She describes herself as nervous and restless when under stress, but she is otherwise mentally healthy.

She states that the mother was somewhat overprotective, but not especially so towards Stina, who has always been treated according to her age. Stina had to work harder at school than her sisters, and she was quieter, less active and more sensitive. She has always been very helpful, hard-working, conscientious and neat with her work.

It is her impression that her sister Stina is quite happy in her work and well adjusted in her marriage. She has the feeling that Stina would like to adopt a child, but that her husband is not very interested yet.

No. 36, Susie, a 26-year-old single bookbinder's assistant with karyotype 45,X/46,X,r(X). Height: 151 cm

Susie grew up in a small town and still lives there. Her father was a farmer, he died from brain haemorrhage in connection with an accident when she was 13 years old. She has a 30-year-old sister and a 20-year-old brother.

Her relations with her mother and her two siblings are very good. She has,

however, some difficulties in joining in discussions between her two siblings who have a better education than herself.

She got polyomyelitis at the age of 5 and was completely paralysed for a while, she was hospitalized for several years. The paralysis disappeared, except for muscle atrophy of the neck and back muscles which has given trouble by a tendency to up-drawn shoulders and pain in the neck and back muscles.

She left school at the age of 15. She was happy at school, and she always had a couple of good girl friends and got on well with the other children at school. She was the shortest in her group, but she was never teased. She was on good terms with the teachers. She was best in subjects like Danish and history and had some difficulties in arithmetic and in writing as neatly as she would have wished. She was average in her class.

The teachers describe Susie as a pupil who got on well with the other children as well as with the teachers. She had difficulties at school and appeared somewhat retarded. It was the general impression that she was overprotected at home, especially by her father.

After leaving school at the age of 15, she spent half a year at a youth school which she enjoyed. On account of her handicap from polio she spent three months at a school for handicapped persons with the purpose of discovering an occupation that would take the muscle atrophy of her neck and back muscles into consideration. During the past five years she has been working at a rehabilitation workshop doing bookbinding which she likes, and she is thinking of continuing with bookbinding. She gets on well with the other patients at the workshop and with the management. She works hard and with care. She has a very good girl friend at the workshop, a young girl who suffers from epilepsy. They spend their summer holidays in the southern part of Europe every year; this year they are going to Spain. Occasionally they go out dancing or to the movies, but, otherwise, except for visiting her family, she stays at home.

She had a boy friend at the age of 18. They had sexual relations a couple of times, but she only felt pain and discomfort, and the boy friend parted from her after a couple of months. Since then she has had no boy friend and no sexual relations. She is quite worried about her possibility of finding a husband and of keeping him.

At the age of 19, she was given cyclic hormone treatment for approximately half a year. She does not think that it had any effect on her development of secondary sexual characteristics, and she is quite satisfied with her development. She is 151 cm tall, and she has no complaints about her stature, but she would like to weigh a little less than her 55 kg.

She discontinued hormone tablets when her supply ran out, but she has agreed to resume the treatment upon the advice given at the present examination.

Her mood is usually good and stable, but she easily gets dysphoric periods of brief duration without any apparent cause. She does not consider herself very

sensitive, and she is not nearly so hot-tempered as her siblings. She considers herself immature for her age and more immature than her sister was at her age. She has no special difficulties in making contacts, but it has always been difficult for her to keep her friends.

No. 37, Marion, a 15-year-old girl with karyotype 45,X. Height: 136 cm

Marion lives in a provincial city, her father is a dental mechanic; she has a 10-year-old sister. Her relations with her parents and her younger sister are good.

She was a very fretful baby, without any apparent reason. She did not thrive, and the mother says it was difficult to get her to suckle, and it often took most of the night to give her the last meal. In spite of this her development did not deviate from that of her younger sister, except that she has always been shorter, particularly so during the past two years.

She is happy at school and is doing well. She was very sad when the parents moved to a bigger city, and she had to change school. She did not like the first school in the city, she could not get on with the other children, and she was transferred to another school where she has settled down happily and gets on well with the teachers and the other children. She has never been teased because she is short, but sometimes the other children make comments about it.

She has previously had some trouble with arithmetic, but she is doing well at the moment in all subjects. The mother says that the teachers have always liked her very much because of her diligence, stability and good mood.

Next year she is to be sent to a boarding school where she will take the school-leaving examination of a »realskole« and maybe later the university entrance examination. The school belongs to the Adventist society of which both parents are members, and both have attended this school themselves. The mother says that in the parents' opinion, it will be good for Marion to be away from home because they have a tendency to overprotect her.

The teachers describe Marion as a persevering girl who never gives up. She is doing well at school, especially in languages and history. In some subjects such as needlework and domestic science she does her best, but lacks ability. She gets on well with the other children as well as with the teachers.

She has talked about becoming a nurse, a children's nurse or a veterinary nurse, but she has not made up her mind yet.

She is a girl guide, in her spare time, she reads a good deal, she rides and she owns a couple of guinea pigs; she is very fond of animals. She also likes housework and needlework.

The mother describes Marion as diligent, conscientious and very painstaking. She has always been somewhat precocious, and in some ways is very sensible and mature for her age, whereas in other ways she is more childish. She has, for instance, not yet become interested in boys like her girl friends of the same age,

and she is not very interested in clothes or in going out with girl friends.

She is somewhat sensitive, but apparently not much more so than her mother. She is comparatively stubborn like her father, but it takes quite a lot before she loses her temper. Her mood is good and stable, and the mother describes her as quiet in comparison with her restless and more lively sister. It is quite easy for her to make contacts, she has several good friends.

She has recently been examined on account of a slight decrease in hearing, but the parents were told that a hearing aid was unnecessary; the decrease in hearing applied only to certain notes.

No. 38, Minna, a 14-year-old girl with karyotype 45,X. Height: 137 cm

Minna lives in the capital. Her father has a delicatessen shop, she has an 18-year-old brother.

Her relations with her parents and her brother have always been good.

She was such a puking, fretful baby that it was a nightmare to take care of her. The mother tells how she often felt that Minna vomited more than she ate, and she was afraid that the child would die from lack of nourishment. She was admitted to a paediatric department on account of her vomiting and feeble development, where it was said that the cause was mental, and that there was nothing to be done, except to hope that the condition would right itself. During infancy, Minna was often ill suffering from inflammation of the throat, colds and bronchitis.

She was quite early in her physical development. She was a very lively child, very happy and smiling.

She began school at the age of 7, and she is now in the 8th form. She is doing well in all subjects, and she is average in her group. She has always liked school, the teachers like her very much on account of her good mood, her diligence and her helpfulness. She always gets on well with the other children. She has several girl friends both in and out of school. Her short stature is sometimes remarked upon by the other children, but she has never been teased.

The teachers describe Minna as a diligent girl who is doing well at school. She has, however, a tendency to work somewhat superficially and fast. She is a very extrovert, friendly and positive pupil, who is popular, and who gets on very well with the teachers and the other children.

She says that she has no special plans concerning her future, but the mother says that Minna has talked about becoming an occupational therapist. She is very good at manual tasks. She has no special spare time interests, but she reads a little, and she is interested in needlework and different kinds of handicrafts. She is also interested in pop music.

She has a happy, open disposition, and she easily makes contacts. Her mood is good and stable, she is active, lively and liked by everybody.

No. 39, Bodil, an 18-year-old single student of domestic science with karyotype 45,X/46,X,r(X). Height: 148 cm

Bodil grew up in a small town, and she still lives there. Her father is a policeman, she has two sisters, 22 and 6 years old, respectively. Her relations with her parents and sisters are good.

Childhood development was normal. She was always happy at school. She got on well with the teachers as well as with the other children. She did not work very hard, she was average in her group until the 7th form. From then on she became more interested and worked harder; in the 8th form she was somewhat above average in her group. She had some difficulties in languages, she thinks that she was somewhat word-blind, but these difficulties also disappeared from the 7th form onwards. After 10 years' schooling, she spent about a year in domestic service. She was quite happy and gave satisfaction.

The teachers describe Bodil as a very diligent, conscientious, nice and friendly girl who was rather ambitious. She was quiet and reserved until the 8th form when she began to become much more extrovert and got several good friends. She was never teased, but was somewhat handicapped on account of her decreased hearing. She was, however, a very popular girl, and she always got on well with the teachers.

During the past five years she has had a horse and spent a lot of her spare time riding and jumping. She has just sold her horse because she is going to spend 10 months at a domestic science school, but she plans to buy another horse when she has finished her training. She is quite a good rider, and she has won two first and two third prizes in jumping competitions. She is very fond of animals, and she has also had ideas of becoming a veterinary nurse, ideas which she has now given up because the openings are few and the pay poor.

She is thinking of training as a nurse, but she may first take a commercial course.

In her spare time she sometimes helps her mother making ceramics, but she says that she has no very great talent like her mother. She also helps with the gardening, she has several friends in the neighbourhood, and, as previously mentioned, she spends a lot of time riding. Her friends are somewhat younger than herself. She had a boy friend for a short period, but she never had any sexual relation, she had no real desire, and she would like to wait till she gets what she calls a real boy friend.

She reached puberty at the age of 13-14 with development of the breasts and secondary sexual characteristics. At the age of 15 she had two menstrual discharges, one quite strong, the other weak. She has had no menstruation since, and no hormone treatment has been given. It worries her to think that this may mean that she cannot have children. She has not been informed of this contingency. Physicians have told her that she may have hormone treatment at around the age of 19. At the moment she is in hospital for examination with a view to

growth hormone therapy.

Her mood has always been good and stable, and she thinks she is quiet and well balanced; she is somewhat shy and reserved towards strangers, but she likes company, and she has several good friends.

The fact that she is only 148 cm tall does not bother her very much, but she hopes she will become somewhat taller. The worst of being so short of stature is that most people consider her 14-15 years old and not 18.

It bothers her quite a lot that she is overweight, and she has recently taken weight reducing tablets. While doing so she was very tired and had difficulties in sleeping, but she did not feel nervous or irritable in any way; she managed to bring her weight down to 49 kg, but she is now again up to 55 kg.

Interview with the 22-year-old single sister, Ilse, five months after the examination of Bodil

Ilse got on well at school and was slightly above average, but she had some difficulties in reading and writing, and she had to work hard in these subjects whereas mathematics was quite easy for her. She passed the university entrance examination without difficulties. At school she had some difficulties in getting girl friends. She preferred to play with boys and was a real tomboy, whereas Bodil was always very girlish. Ilse was more active as a child than Bodil. Bodil is extrovert, and it is easy for her to make contacts whereas Ilse herself is more reserved.

She considers herself quite different from Bodil. She describes Bodil as invariably nice, friendly, extrovert, trusting and obliging, but somewhat childish. When they were children, they always used to quarrel a lot, and Bodil is still in a certain opposition to her.

Ilse has been studying in the Pharmaceutical High School since she got the university entrance examination three and a half years ago, and she will finish in one and a half years. She likes her studies and is doing well. She is cohabiting with a boy friend, and they plan to marry in approximately one year's time. She is somewhat worried about her sexual relations as she never gets orgasm, but prefers petting.

*No. 40, Elin, a 24-year-old single disability pensioner with karyotype 45,X.
Height: 150 cm*

Elin grew up in a provincial city and still lives there. Her father is an unskilled labourer; she has a 29-year-old sister.

Her childhood development was normal, and, except for her shortness, did not deviate from that of her sister. Her mother, especially, seems to have been overprotective towards her.

She left school at the age of 16. She was always happy at school, and she got on very well with the teachers and the other children; she was never teased. It was always easy for her to get friends, but, after leaving school, it has been difficult for her to keep them.

She had difficulties with Danish writing and reading as well as with arithmetic, and she had special coaching in these subjects. She thinks, however, that she began to do somewhat better from the 6th class, but she never reached the class average in Danish and arithmetic. In spite of her difficulties she was, as previously mentioned, always happy at school, and she regrets that her poor intellectual abilities precluded further school education.

She has never gone in for sports of any kind, but she has always been interested in needlework, especially embroidery. She also liked helping her mother about the house, and she used to play quite a lot with children in the neighbourhood.

After leaving the school at the age of 16, she spent five months at a youth school, she got on well with the teachers and the other pupils, and she learned a lot.

The teachers describe Elin as an average pupil who always worked hard and got good results. She was quiet and friendly and always got on excellently with the teachers and the other children.

After leaving the youth school at the age of 17, she got a situation as a domestic servant, but the work was too much for her strength, and she had to give it up. She has had no regular employment since. She was referred to a rehabilitation centre, but after three weeks at the centre she and her parents were recommended to apply for a disability pension on her behalf, which she has received since.

She does not think that they really tried to teach her anything at the rehabilitation centre. She tried different machines, but they were rather difficult to operate, and she did not get any special instruction. It was her impression that at the rehabilitation centre they were more interested in producing goods and less interested in rehabilitating patients. She and her parents accepted, however, the decision about the disability pension, and she has made no attempts to find employment since the decision was made seven years ago.

She lived with her parents till approximately three years ago when she moved into a two-room-apartment of her own next to her parents. She does her own housework, she cooks, and only comparatively rarely she eats with her parents, but she sees them every day and also occasionally gives her mother a helping hand. She often visits her sister, who lives in the same city, and she also goes to see a girl friend, who lives across the street. She does not consider herself very much tied to her parents, but her relations with them are very happy.

She helps her sister and her girl friend with their children, and she occasionally babysits for other families. She spends her time sewing and embroidering, she likes to play the guitar, to listen to music and to read.

Occasionally she goes to the movies with a girl friend or to a restaurant with her parents, but she never goes out with other young people. She stresses, however, that she does not miss it, and she never feels lonely; she is happy and satisfied with her way of life, and she has no difficulties in filling up her time.

Talking about work she says, however, that it was a disappointment that the rehabilitation centre could not teach her anything. She anticipates future problems if she does not get some kind of training. She is delighted to have been told at the present examination that we believe she would be able to manage a job, and we have suggested that she might start with a half-day job in a small shop in the local town.

In this connection she tells how she would have liked to have got a training as a nurse, an office clerk or a salesgirl.

She has never had menstruation, and her secondary sexual characteristics are very scanty. She has not been given hormone treatment. She has never had a boy friend, and she says with a smile that she has not missed this, she has never felt attracted to men at all. She does not think that she will ever marry or have children, and she is quite amused when I ask her. She stresses, however, in this connection that she does like children.

She says that her mood is good and stable. She is convinced that everybody considers she is a happy, satisfied person, and she can take quite a lot of stress before she becomes nervous or sad. It is easy for her to make contacts.

Her short stature does not bother her and never has. She has never been worried about the fact that she has no menstruation, she does not seem to realize that this means that she is not able to have children.

At the age of 12, she was admitted to a paediatric hospital where she underwent an operation for aortic stenosis. The only symptom of her heart affection was headache, which disappeared after the operation. Her physician has, however, told her that she should not work too hard on account of the operation for aortic stenosis.

No. 41, Tove, a 29-year-old single seamstress with karyotype 45,X/46,X,r(X). Height: 138 cm

Tove grew up in a provincial city and still lives there. Her father is an accountant, she has two sisters, 40 and 35 years old, respectively.

She often suffered from convulsions during periods with fever when she was a baby, and, up to the age of 6, she was several times admitted to a paediatric ward on this account. She has never had any epileptic symptoms or signs since childhood.

Her development in infancy and early childhood was normal, except for the fact that she learned to talk very late and was possibly also, by comparison with her two elder sisters, somewhat retarded in her physical development. She was always short of stature and very slight.

She started school at 8 and continued till the 3rd class, but having great difficulties in all subjects she was at the age of 12 transferred to a school under care for mentally retarded children where she stayed until the age of 18. At this school she managed quite well, compared with the other pupils.

She did not like school for the first three years during which she attended the regular school. She was teased because she was so short of stature and did so poorly. She had a couple of girl friends, but otherwise had difficulties in holding her own with the other children whereas she got on well with the teachers. At the school for the mentally retarded she did much better, and she got several friends and was never teased.

The teachers describe Tove as a nice girl who got on well with the other children and with the teachers, but who had great difficulties with application. After three years at a regular school she was transferred to a school for mentally retarded children.

After leaving this school at the age of 18, she spent two years under care at a protected school for the mentally retarded, learning housewifery. She settled down well at the school and got several good friends. She was next occupied as an assistant at a school for the mentally retarded for half a year; her work consisted in helping the younger pupils in needlework and textile printing. For another six months she was engaged at a rehabilitation workshop, and for the past seven years she has been employed at a private dressmaker's workroom in her home town. She receives a disability pension and has a half-time job at the dressmaker's workroom, where she is occupied with curtain sewing and mending.

She does not like her work very much. The other women tease her, and she has no friends.

She has been engaged to a 34-year-old man for the past two years. He is also under care for the mentally retarded and receives a disability pension, but has work at a sawmill besides. They have cohabited for the past four months.

Concerning her relations with her boy friend she says that they like living together, and her friend has tried to persuade her into marriage, but she is hesitant, especially because their sexual relations are unsatisfactory. She invariably withdraws from her friend's attempts of coitus. This is not due to pain or anxiety, she cannot say why, she just withdraws after 5 or 10 minutes, and they have never completed coitus.

She has received cyclic hormone treatment since the age of 15, and her menstruation is regular. She knows that she is not able to have children, and she stresses that she would hardly dare to take the responsibility for having a child, and she would not think of adopting a child.

Her mother says that Tove has always been exceedingly immature and childish and never able to take care of anything herself. It appears from the interview with the mother that she is very dominating and sure of herself.

The mother further tells how Tove, during recent years, especially since she

began living with her boy friend, has become nervous, irritable and »hysterical«. The mother thinks this is due to sexual difficulties.

*No. 42, Helle, a 26-year-old single doctor's secretary with karyotype 45,X.
Height: 138 cm*

Helle grew up in the capital and still lives there. Her father is a chemist, now drawing an old-age pension. She is an only child.

She suffered from pneumonia when she was a few days old and spent the first two months of her life in a paediatric ward. The mother has told her that physically she developed very slowly. She was not able to sit without support till she was 1 year old, and she could not walk unaided till she was 2. Mentally she developed quite normally.

As a baby she had frequent, explosive vomiting, and there were severe eating problems. She remembers that during childhood she nearly always had a loathing for food. As a child she very often suffered from common colds and from inflammation of the throat; altogether, she was a sickly child.

Her relations with her parents were always good. She liked school and got on well with the other children, but she never had any real friends.

She had no difficulties at school, except in arithmetic which she has always found virtually incomprehensible. She was about average, or slightly above average, in all other subjects, and she got her university entrance examination with average marks.

She has always read a lot, but apart from this, she has had no spare time interests, and she has never gone in for any sports. At school she had difficulties in gymnastics.

The teachers describe Helle as a pupil who did well and never had problems of any kind.

After passing her university entrance examination at the age of 21, she started studying French and philosophy at the University of Copenhagen, but having failed in both examinations, stopped after two years. It is her experience that it is much more difficult to study at the university than at school. She was too much on her own, she had no friends.

After leaving the university, she took a one year course as medical secretary, which she completed without difficulties. During the past two years, she has had a number of temporary jobs, but never any permanent employment. She was quite happy in a recent job in a pathological department where the work was not so forced, whereas she had had some difficulties in a medical department where the working pace had been too much for her.

It worries her that she has not been able to get permanent employment. It is her impression that most employers begin to have misgivings when they see how short she is (138 cm), and when they hear that she has been a secretary for two years without ever having had permanent employment.

Sometimes she has considered going back to a university study again, but she would be quite satisfied to be a medical secretary provided she could get a permanent employment.

At a follow-up examination six months later, she was found to have obtained employment as a medical secretary.

With reference to puberty and sexual relations, she states that, at far as she remembers, she went through puberty at the same time as her girl friends, but she says that she has never been very interested in boys, she has never had a boy friend. She feels insecure about sexual matters, she is afraid that her vagina is so short and narrow that it will not be possible for her to have sexual relations. She is very anxious to learn whether her vagina might be dilated by a gynaecologist. She knows very well that she cannot have children, and she says that she would not be interested in adopting children.

She has been given cyclic hormone treatment from the age of 15. Menstruation is regular without complications.

She has a number of questions written down on a piece of paper. She would like to know if it is abnormal that as a grown up she always has bowel movements three to four times a day. She also wants to know if this has anything to do with the fact that she is very troubled with wind. She further wants to know if it is characteristic of Turner's syndrome to have pigmented naevi on the face and on the body, and she asks if her squint has anything to do with her chromosome abnormality.

Usually her mood is good and stable, but as far as work is concerned she easily becomes hot and bothered if she is rushed. She is not very hot-tempered, and she considers herself quiet and reserved with some difficulties in making contacts. She quite often feels lonely.

The fact that she is only 138 cm tall has not bothered her much; what does bother her is the fact that people do not think she is grown up even though she is now 26 years old.

No. 43, Inge, a 12-year-old girl with karyotype 45,X. Height: 121 cm

Inge lives in the capital. Her father is a bookseller, she has a 14-year-old sister.

Her relations with her parents have always been happy. Her elder sister teases her a lot because she is very dependent upon her mother and has a great need for physical contact with her parents.

She has always been happy at school, she is above average in most subjects, but she is best at arithmetic and Danish; she has some difficulties in swimming on account of her short stature. She gets on very well with the teachers who appreciate her diligence and her happy, obliging and contented disposition. She has several good friends both in and outside school.

The mother says that Inge works hard and conscientiously at her lessons. She

likes school, and she is now in the 6th form and plans to work for the university entrance examination.

The teachers describe Inge as a clever and happy girl who is good at every subject and gets on well with the other children and with the teachers.

She has no plans for the future, but when I ask her she says that she would like to be an actress, and the mother says that this is something Inge talks about very often. She has also considered training as a kindergarten teacher or a children's nurse as she is very fond of children.

She has several interests outside school, she plays the flute, she sings in a school choir, she reads a lot, she is helpful about the house, and she is interested in needlework. The mother says that she never has to ask her to do anything, she always takes the initiative herself. She is extrovert and makes friends easily. She is often one who takes the initiative to make contacts when the family travels abroad, and the mother says that everybody falls for her.

Interview with the 14-year-old sidster, Lone, three months after the examination of Inge

Lone, who is in the top form of a »realskole«, says very determinedly that she is not going to continue school any longer than to the end of this year. She does not like the teachers, the other children or the school work. She is tired of school. Her best subject is mathematics, but in physics she expects to get zero. Her parents say that she is well-liked by the teachers and the other children. She is doing quite well in all subjects, but for the past year she has been in strong opposition to practically everything and everybody. She has a tendency to shut herself up and become dysphoric. The parents have been worried about her development during puberty.

Lone says that she has no idea about what her future occupation is to be, she is not interested in anything particular. The parents tell how she has recently talked about becoming a laboratory assistant, but this she does not mention at the interview.

The parents think that the very strong puberty reaction of Lone is to some extent a reaction against the extreme opposite to what she sees in her sister Inge, who is an extrovert, happy, affectionate, well balanced, conscientious and hard-working girl who is well-liked by everybody, and who openly displays her affection towards the parents, especially towards her father to whom Lone hardly speaks, and towards whom she is in great opposition.

*No. 44, Nana, a 35-year-old married clerk with karyotype 45,X/46,X,i(Xq).
Height: 152 cm*

Nana grew up in a provincial city, and she now lives in the capital. Her father is a market gardener, she has a 27-year-old brother.

Her relations with her parents and with her brother have always been very good. Her parents have supported and helped her.

Except for short stature, her childhood development was normal. She passed the school-leaving examination of a »realskole« at the age of 17. She did well at school, she was always in the best part of her class, and had no difficulties with any subjects. She got on well with the teachers, she was diligent and had several good friends; she was teased because she was the shortest in her group, but liked school, nevertheless. She went in for sports, she was an enthusiastic handball player and kept up this interest after she had left school. Furthermore she still goes in for gymnastics.

The teachers describe Nana as a pupil with the best possible relationship with the other children as well as with the teachers. She was a very nice girl who took part in the activities of her group in the best possible way. She was clever and diligent, getting good results in all subjects, and her behaviour was excellent.

After passing the school-leaving examination of a »realskole«, she was a bank messenger for approximately half a year. She next served an apprenticeship at an office in the customs service where she has been working since, which is for the past 15 years. Since she married 10 years ago, she has been working half-time with the customs service. She finds the work congenial, and she is on excellent terms with her colleagues and her superiors.

She went through puberty at the age of 13-14, at the same age as her girl friends, and she also became interested in boys at that age. She had several boy friends before she met her present husband, when she was 23 years old. They were engaged for one year, and they have been married for 10 years. The marriage is happy. Her husband is quiet, well balanced and helpful, and they have many interests in common. They applied for adoption permission immediately after their marriage, and five years later they got a 4-month-old boy who has developed normally. He is now 3 years old and healthy, physically and mentally. They both love him as if he was their own.

Sexual relations are good with no complications and full satisfaction for both. She was given hormone treatment from the age of 17 till 19, but owing to persistent nausea, she discontinued treatment at the age of 19. Menstruation has no significance for her when she knows that she cannot become pregnant. Her secondary sexual characteristics had developed before she began getting hormone treatment at the age of 17.

It is easy for her to make contacts; she and her husband have many good friends, and she never feels lonely. Her mood is good and stable.

No. 45, Karen, a 19-year-old single clerk with karyotype 45,X. Height: 141 cm

Karen grew up in the capital and still lives there. Her father is a fitter, she has three sisters, 20, 12 and 5 years old, respectively.

She grew up in a home which was marked by the parents' perpetual quarrels which finally led to their divorce. She says that in spite of this her childhood was relatively happy; she has always got on well with her mother.

She was a »blue child« at birth; she suffered from aortic stenosis and was twice operated at the age of 1 and 5 years for this affection. After the second operation there have not been complications of any kind, but she was not allowed to take part in gymnastics or any other sports at school. She liked school, but she had some difficulties in getting girl friends, but she always had at least one girl friend.

The teachers describe Karen as a good pupil who did well during the first four years at school, but from the 5th year she began to have great difficulties, especially in mathematics, and later she also got difficulties in other subjects. She was teased by the other children for her short stature, but she has always been on very good terms with the teachers, and she always appeared to be happy in the company of adults.

After leaving school at the age of 15, she helped her mother take care of her younger sisters for one year, after which she worked as a domestic servant with a family for six months, but the work was too much for her, and she was referred to a rehabilitation centre from where she was sent to a school for the handicapped for 10 months. She says that this was a great experience for her; she got several friends, and she improved her school knowledge considerably. She also learned typewriting, and after leaving school this spring she has had temporary employment at a bank for the past three weeks. She is doing quite well, but she hopes that the rehabilitation centre will find a clerical apprenticeship for her. She would have preferred to have become a kindergarten teacher or a children's nurse, but she realizes that she lacks the preliminary education for such training, and she will be quite satisfied to become a clerk like her sister.

She was given cyclic hormone treatment at the age of 15, and menstruation is regular during this treatment. She has never had a boy friend, and she has had no sexual relationship. From the interview it appears that her sexual libido is weak.

She still lives at home, but she says that she is not quite satisfied, she always has to help her mother, and she is thinking of leaving home and getting her own room as soon as she earns sufficient money to pay for it, and her mother approves. She has never had any special spare time interests; she recently attended a course in child nursing as she very much wanted to become a children's nurse. She has a few girl friends, she occasionally goes out with them to the movies or to dance. Approximately a year ago she was informed that she cannot have children. This was a hard blow for her as she loves children, but she is now

getting reconciled to the idea, and she plans to try to adopt a child when she marries.

Interview with the 21-year-old single sister, Ketty, three months after the examination of Karen

Ketty left school at 17 with the school-leaving examination of a »realskole«. She was not a very diligent pupil, but she managed to be average in her class, and she got on fairly well with the teachers and the other children. She regrets that she did not continue to get a university entrance examination. After leaving school, she got an apprenticeship at a publishing firm, where she is still employed. She likes the work, she thinks it is interesting, and she is on good terms with her superiors as well as with her colleagues.

She was a very active child, and she developed in very similar fashion to her two youngest sisters. Karen was quieter and more difficult to get into contact with; she was also more sensitive. Karen has few friends, but when she gets a friend, she really keeps her, and she has still kept up with some of her old school friends. Karen has been a little jealous of Ketty because it was easier for her to get on at school as well as in all aspects of life.

Ketty has a boy friend. They cohabit. They love each other and get along well.

It is Ketty's impression that Karen has matured tremendously during the past year while away from home at a school for the handicapped, and where she made very good contacts with the other pupils. She has become much more sure of herself, more adult and less naive, but she still easily gets influenced by others who often exploit her.

b. Case histories of controls comprising girls with growth retardation, primary amenorrhoea and normal karyotype, 46,XX

Table 80
Controls
Mental and physical disorders in parents, siblings and near relatives

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
101	17	22	24	1	Father, thyreotoxicosis.		Paternal grandfather, alcohol abuse. Maternal grandfather, polyarthritis.

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
102	28	22	30	3	—	—	—
103	25	31	30	2	—	Sister, stillborn.	Paternal aunt, mentally retarded.
104	27	39	63	3	Father, febris rheumatica. Mother, kidney disorder.	—	Maternal cousin, Down's syndrome. Paternal cousin, Down's syndrome.
105	24	38	41	9	Father, asthma. Mother, struma.	Two sisters, struma.	Two maternal aunts, struma.
106	18	27	32	0	—	—	—
107	10	22	33	1	—	—	Paternal aunt, diabetes mellitus.
108	18	31	33	2	Father, coronary occlusion. Mother, cholelithiasis.	—	—
109	12	26	54	3	Father, dyslexia. Mother, hemicrania.	Brother and sister, dyslexia.	Paternal cousin, polyarthritis. Paternal uncle, committed suicide.
110	17	27	29	4	—	Sister, stillborn.	Maternal aunt, epilepsy. Maternal uncle, hemicrania. Maternal grandmother, hemicrania. Paternal cousin has the karyotype 47,XY,+mar.
111	13	23	28	2	Father, stomach ulcer.	—	Maternal grandmother and great-grandmother, manic-depressive disorder.
112	9	32	29	1	Mother, hemicrania.	—	Maternal aunt, hemicrania. Maternal grandmother, hemicrania. Maternal aunt, struma.
113	21	28	42	2	Mother, poliomyelitis, stomach ulcer and ovary tumour.	—	Maternal aunt, diabetes mellitus.
114	22	31	32	1	Father, spells of anxiety.	Brother, epileptic fits as a child.	Maternal aunt, depression. Maternal cousin, schizophrenia.
115	21	26	33	2	—	—	—

No. 101, Grace, a 17-year-old school girl. Height: 147 cm

Grace grew up in the capital and still lives there. Her father is a commission agent, she has a 16-year-old brother.

The parents were divorced when Grace was 16 years old. The mother has a friend who lives with her and her children.

Grace developed normally as a baby, she was a very sweet and easy girl. The mother says that there was no great difference in the way Grace and her brother developed in infancy.

Grace was considered mentally too immature to begin school at 7 and waited a year. At the first school she was poorly adjusted, shy and anxious. She was transferred to another school where she has been since. At present she is in the 9th form. She was not moved up from the 7th form, and stayed there for a second year, mainly on account of her difficulties in arithmetic.

She has never liked school, she has no friends, and she says that both boys and girls tease her and look down upon her, they consider her childish and immature for her age, and she does not get any real support from the teachers. She is tired of school and looks forward to leaving at the end of the present year.

The teachers describe Grace as a quiet, reserved girl who is extremely immature living in her own dream-world. She has neither the inclination, nor the initiative to try to live up to the demands of school, she is very passive. She has no friends at school, but, towards her teachers, her manner is usually agreeable and confident.

She has a couple of younger girl friends outside school, but the father of one of them has recently told her that he did not like her and did not wish her to visit his daughter because he considered her too immature to be the friend of his 13-year-old daughter; this was a very hard blow for her, and she cries when talking about it.

She is looking forward to leaving school at the end of this year, and she expects to get a job as a piccoline at the University Hospital where her mother works. She would like very much to train as a children's nurse, her mother has previously worked as a children's nurse, and she herself loves children; she has a babysitter job, and she seems to have good abilities for the care of children.

She says that she misses her father, she visits him regularly. Her parents' divorce upset her very much, and she was even more upset when a friend of her mother's moved into their home; this friend wishes to take a hand in her and her brother's upbringing. They both dislike him, and she feels, furthermore, that his presence has made the previous good contact with her mother extremely difficult. She cries when talking about this.

The mother says that Grace is a sensitive girl, she is very immature for her age, her maturity is that of a child of 11-12 years of age, and not that of her actual age of 17; this makes it difficult for her to get girl friends. Grace herself says that she is more immature than other girls of her age, but she considers this

due to the fact that everybody has always treated her according to her size and not according to her age, and at school they constantly tell her how childish and immature she is. She thinks that if they would treat her as a girl 17 years of age, she would actually live up to this and become more mature. She hopes this will happen when she leaves school and gets a job.

Grace has no special spare time interests, she does not read very much, she has never gone in for any sports outside school, and she only has a couple of girl friends.

No. 102, Helen, a 28-year-old married student of psychology. Height: 140 cm

Helen grew up in a small town, and she now lives in a provincial city. Her father is a farmer, she has three brothers, 27, 23 and 16 years old, respectively.

Except for her retarded growth, her childhood development was normal. Her relations with her parents and siblings have always been happy. She went to a village school like her three younger brothers and left school at the age of 16. She had no difficulties at school, her best subject was arithmetic, but she also liked gymnastics very much. She got on well with the other children and with the teachers, but she was teased because she was short of stature. After leaving school, she was employed for five months as a domestic servant in a house with three children; she liked this occupation and had no difficulties. She spent five months at a youth school before she started working for the school-leaving examination of a »realskole« at a night school. At the age of 20, she passed this examination with very good results. For a brief period she had employment at an office and then started on a course for laboratory technicians with support from the rehabilitation centre. She finished this course after five months. Subsequently she got a grant to study for the university entrance examination, and she passed this examination after two years with average marks.

She then spent five months working at a kindergarten and applied unsuccessfully for admission to the kindergarten seminary, there being too many other applicants. This was a disappointment for her, and she decided to study psychology instead. At present she has been studying psychology at the university for one year, and she likes it very much. She has many interests in common with her fellow students, and she feels that the study of psychology has given her insight into many problems.

She met her present husband when she was 20 years old and married when she was 21. Her marriage is harmonious and happy. They have many common interests and get along well, also in respect of their sexual relations. Her husband is a civil engineer, but has been unable to find employment since he qualified one year ago. Their financial circumstances are good, and they live in a house of their own.

They both love children, and they agreed to apply for permission to adopt a

child when they married. They are still waiting for this permission. From the conclusion arrived at as a result of the psychological examination following this application, it appears that she is of normal intelligence. There are no specifically neurotic mechanisms in personality function, but there is a tendency to react somewhat hectically on provocation and to become labile and lose control in situations of stress.

The diagnoses during hospital admissions have consistently been nanismus hypophysarius, amenorrhoea primaria and sterilitas primaria. She has been given different types of hormone treatment, during which she has had scattered menstruation and four spontaneous abortions.

No. 103, Irene, a 25-year-old married woman. Height: 135 cm

Irene grew up in a provincial city, and she still lives there. Her father is a car hire proprietor, she has an elder sister.

Except for her retarded growth, her childhood development was normal. She says that her home was happy and harmonious, and her relations with her parents and sister were always good.

She went to a village school from the age of 7 to the age of 14. She always did well and got on well with the other children as well as with the teachers, except that she was teased somewhat by the other children because of her short stature. After leaving school, she was in domestic service for some years. She liked working for families who had children. She had no difficulties and was well-liked. Subsequently, she was employed as a machinist at a local factory.

She became interested in boys at the same age as her girl friends and her elder sister. She married her present husband, who is an unskilled labourer, at the age of 23; the marriage is happy and harmonious in every way. Since her marriage, she has had occasional work as a machinist at a local factory. During recent years she has, however, become a registered daily child-minder in her own home, this work appeals to her very much, and she and her husband have applied for permission to adopt a child.

The psychological examination with Rorschach and TAT in connection with the application for adoption shows normal conditions. The conclusion of the psychologist is that no psychopathological symptoms are revealed through TAT and Rorschach. The psychiatric examination made at the same time shows normal conditions with no signs of any psychopathological symptoms, and it is concluded that she is considered suitable for permission to adopt a child.

No. 104, Jenny, a 27-year-old single university student. Height: 156 cm

Jenny grew up in a provincial city and still lives there. Her father was a forest

owner, she has two elder sisters. Her relations with her parents and sisters are happy.

She began school at the age of 7, already able to read and write. She never had any difficulties at school. She was always among the best in her class. She passed the university entrance examination with high marks at the age of 18. She had good friends at school and got on well with the teachers.

At present she is studying Russian as the main subject at the university; she had chosen music as her subsidiary, but this she has now given up possibly in favour of history.

Menstruation was never spontaneous, but was regular during periods with cyclic hormone treatment.

She has always considered herself more immature than other girls of her age, and her short, slight figure has bothered her, people seldom take her to be anything like as old as she actually is. She has often wondered whether to consult a psychiatrist about her inferiority feelings, but has refrained for fear that this would mark her as different from everybody else, and she is also afraid of being put in a psychiatric register and of getting a diagnosis that will follow her all her life.

She had a boy friend for a couple of years, but he broke with her a year ago, and she has not yet got over it. She felt that they had a very good time together, sexually and otherwise, but when they had known each other a couple of years, he told her that he felt that his love for her had burned out, and that it was better they parted. She had to accept this, but she could not understand it, and she has never been able to understand why this happened. She feels that she may possibly not have been a satisfactory sexual partner.

She would very much like to resume hormone treatment as she had had for a number of years. It was discontinued three years ago on account of her somewhat low basal metabolism which the gynaecologist thought the hormone treatment might further reduce. For the past couple of years she has often felt extremely tired. She has increasing difficulties in learning new material at the university, and she often feels that she cannot study at all. She says with a smile that she really thinks she used to be quite clever, but at present she sometimes doubts whether her intelligence is within the normal range.

She cannot understand that she is 27, she most often feels as if she was only 16 or 17 years old, a fact that bothers her quite a lot.

No. 105, Britt, a 24-year-old single domestic help. Height: 153 cm

Britt grew up in a small town, and she now lives in a provincial city. Her father is a small farmer, she has eight sisters aged 23 to 41, and a 21-year old brother.

She developed normally as a child – like her siblings. Her relations with her parents and siblings are good. She and her siblings went to a village school; they

all left after the compulsory seven years, none of them has inclined to any further education.

She managed fairly well at school, but she was below average, and she had great difficulties in remembering what she had been reading. She liked to go to school and had good relations with the other children. She was not teased because of her short stature. She got on very well with the teachers, but she was never very hard-working or a very popular girl at school.

After leaving school, she got at job as a domestic servant, and she has had several such jobs and has been doing fairly well. During the last few years she has been a domestic help, a job she likes. She has her own apartment and lives together with a 24-year-old boy friend.

She developed according to her sisters and girl friends of her age. She developed secondary sexual characteristics at the same time as they did and to a satisfactory degree. She had quite regular menstruation from the age of 13 to 15, but since then she has had amenorrhoea, that is during the past six years. At the age of 18 she was given cyclic hormone treatment for a couple of months. During hormone treatment there were tendencies to hyperventilation and fits with hyperventilation tetany, and hormone treatment was consequently stopped. She was told that she was normally developed, except for the fact that she did not have menstruation. She might be treated with hormone whenever she wanted to become pregnant, and she understood that there might be a possibility that she could become pregnant during hormone treatment.

At the age of 25 she was admitted to a psychiatric hospital due to the fact that she had become increasingly tired and depressed with feeling of insufficiency. One of her sisters was afraid that she might be so depressed that there was a risk of suicidal attempt.

During admission to the psychiatric hospital she complains of pain in her feet, joints and bones. She also complains of short lasting burning sensations in different parts of her body, and she complains of occasional fits of headache. She feels her nose is constantly closed. She thinks she has an infection in her eyes, and that her axillary glands and neck glands are large which is not the case. She considers her tiredness, depression, irritability and all her physical symptoms due to the fact that she has no menstruation.

During admission she appears immature, impulsive and hysterical, and she is considered to suffer from a hysterical neurosis. It is, however, the impression of the psychiatrists that her symptoms do not bother her very much. She does not appear very depressive, and she is not considered to be suicidal. She is discharged from the psychiatric hospital without treatment as she is considered unlikely to respond to any psychiatric therapy.

Cyclic hormone treatment is advised.

At the psychiatric interview in connection with the present examination she says that she feels as if something has stopped inside her, and that this is the cause of all her body-sensations and her tiredness, and she is convinced that her

depression would disappear if she could only have her menstruation.

She says that her »sexual life« has completely stopped. She still has sexual relation with her boy friend, but she does not get anything out of it. She feels »cold« and without any interest in it. She would rather not have sexual relations. She is often quarrelling with her friend, and she is not planning to marry him.

No. 106, Lisbeth, an 18-year-old single grammar school girl. Height: 158 cm

Lisbeth grew up in the capital and still lives there. Her father is an inspector, she is an only child.

Her relationship with her parents are good, especially with the mother who has her full confidence.

She developed normally as a child. At the age of 3 it was noticed that she had decreased hearing. She has had a hearing-aid since the age of 6, and she is hardly able to hear at all without it. Even with the hearing-aid, she has some difficulties, especially when she cannot see the lips of the person speaking to her.

She has had no difficulties at school, she has always been in the best part of her class, and she got good marks at the examination at the age of 17. She gets on very well with the teachers, and she has always had many friends.

She has never been teased at school for her short stature; at the moment she is 5 cm taller than her mother (158 cm), and she is quite satisfied with her height.

At the grammar school, she has had some difficulties in mathematics, physics and chemistry, and in these three subjects she is below the average of her class; she gets help in these subjects from an older pupil.

The teachers describe Lisbeth as a clever girl who has always got on well at school. She has decreased hearing and has some difficulties in mathematics, physics and chemistry. She gets on well with the other children as well as with the teachers.

Concerning her plans for the future, she says that she has not decided yet, but she has been thinking of training for employment at a play centre or of becoming a kindergarten teacher, but she has not made up her mind yet.

The mother says that Lisbeth is very active, she is always occupied. She spends considerable time over her homework, but she also reads a lot, apart from this she is an enthusiastic badminton player and coaches a group of children in badminton. She knits, sews and cooks and is very helpful about the house.

According to the mother she is mature and developed according to her age and according to the level of her friends. She has known several boys since the age of 16-17, and the mother says that she occasionally comes to her with problems concerning her relations with boys, especially in connection with petting.

Lisbeth says that she has not had sexual relations yet. She would like to wait until she knows more about her »hormone disorder«. The non-appearance of

menstruation has worried her a good deal, and she is also unhappy about the absence of mammary development.

The mother says that Lisbeth has always had a good and stable mood. She is not especially sensitive. Her temperament is like her mother's, they both flare-up easily, and they quarrel quite often, but they are the best of friends a few minutes after they have stopped quarrelling.

No. 107, Isabel, a 10-year-old girl. Height: 118 cm

Isabel lives in the capital. Her father is a head manager, she has a 13-year-old brother.

Her parents were divorced when she was 6 years old. They still see each other occasionally, and the children regularly visit the father and get along very well with him. The divorce does not seem to have been very stressful for her. Her relations with both parents as well as with her elder brother are good. The mother married again, and Isabel gets on fairly well with her stepfather.

She grew up in a home with frequent disagreements between the parents, and the mother describes herself as hot-tempered and somewhat »hysterical«. Isabel developed normally as a child, but she had eating problems with vomitings as a baby. Otherwise, however, she developed very similarly to her elder brother, except for growth retardation from around the age of 4-5.

She is very happy at school, she is in the best part of her group, and she has no difficulties in any of the subjects. She is good at sports, and she goes in for swimming and jazz ballet outside school.

She gets on very well with the other children at school, but she is occasionally teased because of her short stature. She is active, diligent and very well-liked by the teachers. She reads a lot, and she has many activities outside school.

The teachers describe Isabel as an unusually clever and nice girl who is good at all subjects. Her behaviour is excellent, and her relationship with the other children as well as with the teachers is extremely good.

The mother describes Isabel as a somewhat hot-tempered, stubborn and sensitive child, but friendly and obliging. She is mature according to her age, and she has a great sense of responsibility. She loves children and often acts as babysitter. She tends to dominate over children of her age.

No. 108, Julia, an 18-year-old single grammar school girl. Height: 148 cm

Julia grew up in the capital, and she still lives there. Her father is a senior surgeon, she has a 21-year-old sister and a 15-year-old brother.

The parents have told her that she was a very difficult child till the age of 5. She was very irritable, she cried a lot, she was vomiting and had eating

problems. She was much more difficult to manage than her two siblings up till the age of 5. From that age she developed like her siblings, except for growth retardation, a fact that has been discussed a lot at home.

She never had difficulties at school, she is now in the 2nd form at the grammar school and is doing quite well. She has never been very hard-working, and she might have been doing better if she had worked harder.

She was teased some during the first years at school because of her short stature. It bothered her, and she developed what she calls »inferiority complexes«. She never had any great difficulties in making friends, and she has always had a fairly good relationship with the teachers. She is planning to study medicine like her father.

From the age of 16, she began getting interested in boys, but she has never had a boy friend. She has had a single sexual relation without complications.

No. 109, Lisette, a 12-year-old girl. Height: 126 cm

Lisette lives in the capital. Her father is an unskilled labourer, she has two brothers, 20 and 18 years old, respectively, and a 15-year-old sister.

She developed like her siblings, except that she was later in walking. She began school at the age of 8, but she had great difficulties. She was constantly teased due to the fact that she was short of stature with short legs and a waddling gait. She was transferred to a special class for children with dyslexia, and here she has been quite happy. She gets along well with the other children, and she is a girl guide.

It is the impression of the parents that Lisette is somewhat immature for her age. She is rather precocious, but she is a happy and active girl. During the interview the father says several times, »I think Lisette actually should have been a boy«.

Lisette says that she loves animals, especially dogs, and she dreams about owning a dog or horse sometime, and when she grows up she would like to have a job that has something to do with animals.

Psychological examination at school with WISC shows an IQ of 79.

No. 110, Merete, a 17-year-old rehabilitee. Height: 146 cm

Merete grew up in the capital and still lives there. Her father is a bricklayer, she has two sisters, 19 and 12 years old, respectively, and a 10-year-old brother.

Merete was what the mother calls a »blue child« at birth. She was born with the umbilical cord wound twice around her neck, but she quickly recovered, and she developed normally as a child. From the age of 1 she was very active, more so than her siblings. She was somewhat slower in physical development than her siblings, and she has always been mentally immature for her age. She began

school one year later than usual, that is at the age of 8 because she was such a slight, tiny little thing and mentally immature into the bargain. At school she had some difficulties because she was word-blind, she got extra tuition in reading, and she was exempted from learning languages on account of her difficulties in reading. She was somewhat below average at school, but she was a painstaking, conscientious and very happy girl who was well-liked by the teachers. She had some difficulties in getting along with the other children. She was teased because she was short of stature. She never had any real girl friends at school. She never went to gymnastics or swimming because she did not want to undress before the others as she was so slight and short of stature, and her back was slightly crooked.

The teachers describe her as somewhat retarded, compared with the other children in her group. She was quite often absent without reason. She was average in her class, but her working capacity was not very stable. She got on fairly well with the teachers and with the other children.

She has never had any special spare time interests, but for the past couple of years she has helped at a local shop which she likes very much, and occasionally she goes out dancing with her sister.

After recently leaving school at the age of 17, the parents have contacted a rehabilitation centre and has been promised help to further training. At the moment she is working as a gardener under the rehabilitation centre, a decision with which the parents are not at all satisfied. The parents have tried to talk her into training to become a shop assistant, but she is averse to this idea as it would entail her going to a commercial school; she does not want to go to school anymore. The rehabilitation centre hopes that she will become more mature in the course of a year spent in gardening and that she will then be able to make a decision as to her future occupation.

The parents say that Merete previously used to be extrovert, happy and contented, but during the past couple of years she has become irritable, discontented, dysphoric and tired. They think that she is worried about her future, maybe also about the fact that she does not grow very much, and that she has as yet no menstruation.

Merete has always been very tied to her mother, and it appears that the mother is very overprotective.

She is not very happy about her present occupation under the rehabilitation centre. She does not know what the consultant's plans are for her. She herself would like to become a kindergarten teacher, but she knows that for this her school education is insufficient, and she does not wish to go back to school. She never liked school. She was always teased, and it was difficult for her to get friends; it is on this account that she has given up her ideas of becoming a kindergarten teacher. She would like to become a dental nurse like her elder sister, and she hopes that this may be possible without training.

No. 111, Sally, a 13-year-old girl. Height: 125 cm

Sally lives in the capital. Her father is a joiner, she has a 16-year-old brother and a 10-year-old sister.

She developed normally as a child and very similarly to her siblings, except for her retarded growth.

She has always been very happy at school, and she does well. She is above average in most subjects, except for reading, and the teachers like her very much. She has many friends in as well as outside school. She is never teased for her short stature.

The teachers describe Sally as a happy, contented, well adjusted and stable girl who gets on well with the other children as well as with the teachers. She is making good progress at school.

The parents describe her as the most loving, the most trusting, the nicest and most helpful of their three children. She is a very active girl. She has three-four pen friends, and she keeps up a lively correspondance with them. She goes in for gymnastics outside school, and she plays the guitar and always has something to do. She is considerably more active than any of her siblings.

She never talks about her short stature, but she sometimes worries about the fact that she cannot go in for swimming because she suffers from asthma, a disease which, however, does not otherwise bother her very much.

No. 112, Camilla, a 9-year-old girl. Height: 127 cm

Camilla lives in the capital. Her father is a postman, she has a 15-year-old sister.

She developed normally as a child, very much like her sister. She has always been a very active, happy and contented girl who is interested in everything that goes on around her. The mother says that Camilla is happy at school and doing fine. She gets on very well with the teachers as well as with the other children at school. She is a popular girl.

Camilla herself says, however, that she does not like going to school very much, the boys tease her because she is short of stature. She usually gets very angry when they tease her, and she often runs away crying.

She says that she has some difficulties in reading and writing, she works slowly in these two subjects whereas she has no difficulties in arithmetic.

The teachers say Camilla is hot-tempered. She makes fairly good progress, she seems well adjusted, and she gets on well with the teachers as well as with the other children.

During the past years she has had some kind of fits at home and at school; they may come on at any time of day and also sometimes at night. She describes these fits as a sudden feeling of dizziness inside her head, she feels sick, but she never faints. During these attacks, which last a few minutes, she always turns

pale and appears quiet and passive, but remains fully conscious. These fits may occur once or twice daily. They may come on when she is alone as well as when she is with others.

Electroencephalogram shows sharp-waves bi-occipitally and spikes bicentroparietally during sleep. The fits are considered to be of psychomotoric epileptic type, and antiepileptic treatment has been started.

Psychological testing with WISC shows a Verbal IQ of 91, a Performance IQ of 99 and a Full Scale IQ of 94.

No. 113, Bessie, a 21-year-old married ladies' hairdresser. Height: 162 cm

Bessie grew up in a small town where she still lives. Her father is the proprietor of a service station, she has two elder half-siblings, a 28-year-old half-sister and a 26-year-old half-brother from the mother's previous marriage.

She was word-blind and had great difficulties at school, and she left after the compulsory seven years at the age of 15. She was constantly teased at school because she was somewhat obese and because of her dyslexia and difficulties in general. She was always one of the shortest in her group. She had difficulties in getting friends while she was at school, but now she and her husband have several good friends.

She was in domestic service for a year after leaving school. She was apprenticed to a ladies' hairdresser at the age of 16 and completed this apprenticeship without difficulties. She now owns a small hairdressing saloon. She likes her work, and it pays her well.

She met her present husband three years ago, and they married one and a half years ago. The marriage is happy, although her husband is taciturn and introvert. He is employed at the local social service centre, and is much occupied, being also chairman of the local child welfare committee.

She says that sexual relations with her husband are a duty. She has no sexual libido, and she does not get orgasm.

Menstruation was never spontaneous. She has been receiving cyclic hormone treatment for the past year during which menstruation has occurred. Her husband's fertility has been recently examined and found to be very low.

They both love children, and they hope very much that they will be able to get children of their own, otherwise they will try to adopt a child.

She says that she has always had a weight problem, at present she is 162 cm tall, and she weighs 72 kg, but she has weighed as much as 92 kg; however, during attempts to lose weight she has also been down to 60 kg.

She describes herself as extrovert, and she makes contacts easily. She is somewhat sensitive, and at present she is very upset on account of the examination for fertility of herself and her husband.

As a child she often used to have a hemicranial type of headache, but she has never suffered from this as an adult.

No. 114, Ingrid, a 22-year-old single student of building technician. Height: 161 cm

Ingrid grew up in a provincial city and still lives there. Her father is a writer, she has a 28-year-old brother.

She tells that she grew up in a home with good relations between the parents and between parents and children. The fact that the father suffers from anxiety and nervousness, has not had any great influence on her childhood.

She has the school-leaving examination of a »realskole«. It was her intention to continue like her brother, who got a university entrance examination, but she was tired of going to school. Her relations with the other pupils as well as with the teachers were very good, and she was above average in her class.

She never had many spare time interests as a child. She was, however, a girl guide and was quite active as such up to the age of 17-18. She was not very interested in sports, and she played with dolls quite late; she and another girl were knitting doll's clothes and selling it up to the age of 13-14. She does not consider that she has been overprotected by her parents.

After finishing school at the age of 17, she got training as a draughtsman and worked as such for one and a half years. She liked her job, but decided to get further education. She has been at a technical high school for the past two and a half years, and in one and a half years' time she will finish as a building technician. It is a rather demanding study; she tells that there are only 10-15 girls among 500 students. They go to school 8 hours a day, and they usually have 20 hours' homework per week. Only 40 per cent of the students complete the study during the scheduled four years. She hopes to finish within the four years. She lives at home and gets along well with her parents. She has a boy friend who studies at the same school as her, they are planning to marry when they have finished their studies.

Talking about sexual relations she gets quite shy and blushing; she says that it has given her some difficulties at the beginning when she suffered from dyspareunia; this has, however, disappeared by now, but she does not get any orgasm.

She has not been through any actual puberty, but it is her impression that she became interested in boys at the same time as other girls, around the age of 13-14, and she started going out with boys from that age. Growth stopped during puberty, and for some years she was considerably shorter than other girls of her age. She has, however, continued to grow, and by now she is 161 cm tall. Stature has not been any great problem; she was, however, somewhat worried when her growth stopped during puberty, but she has been especially worried about the fact that she has not got menstruation. She is quite satisfied with the development of her secondary sexual characteristics. Physicians have told her that hormone treatment should not be given until she wants to become pregnant.

She says that she has a fairly good and stable mood, but she cannot take very

much stress before she gets dysphoric. She considers herself quiet, well balanced and not very sensitive. She has several good friends, she feels well adjusted, she likes her study and looks forward to become a building technician, she would like to become an assistant in an engineering firm.

No. 115, Paula, a 21-year-old single pupil of a high school. Height: 159 cm

Paula grew up in a small town, and she now lives in a provincial city. Her father is a commission agent, she has two brothers, 22 and 16 years old, respectively. She grew up in a good home, and she had good relations with her parents and siblings as a child. She developed normally, except that she was somewhat short of stature.

She got on well at school, she was among the best in her class, but she was not very hard-working. Relations with the other children as well as with the teachers were very good, but she was critical of some of the teachers. She passed the university entrance examination at the age of 19 with good marks.

The teachers describe Paula as a clever girl who worked with interest and diligence. She had a good and stable mood and an excellent behaviour. She always got on very well with the other children as well as with the teachers.

After leaving school, she started studying law at the university, but failed the first test and left the university. She had, however, a lot of outside interests, and she became an active member of women's liberation. She also got pronounced social political awareness and interest during her stay at the university. She worked in a kindergarten for two months and as a cleaning woman for a couple of months. She got into a working class folk high school where she is at present. She likes it, it is exciting, and there are lots of political and social discussions. She is going to join a left wing party, and she tells that she and her brother are planning to go to South America to spend some time there studying political and social conditions for the working class people.

It is her plan to become a kindergarten teacher, but she would first like to work in a factory in order to get a better feeling of the working class' conditions.

She says that her parents, especially her mother, have never accepted her political interest and left wing connections, and they do not like that she left the university and goes from job to job, nor have they accepted her participation in women's liberation. It easily comes to rather violent discussions between her and her parents, but she still visits them regularly and tries to avoid bringing up controversial subjects.

She thinks that she probably was somewhat aggressive and boyish in her behaviour as a child, but she has never been in any doubt that she is a woman, and she identifies as such.

The fact that she has not got menstruation, has bothered her quite a lot. She has tried to conceal it to her friends, females as well as males, and she avoids

participating in discussions about menstruation, children and the possibility of becoming pregnant. She has complexes about sexual relations. She has tried sexual relations with a couple of boys, but she never got orgasm. She would like very much to have hormone treatment in order to get menstruation.

She is now 159 cm tall, she weighs 65 kg. She would like very much to lose at least 5 kg. She is quite satisfied with the development of her secondary sexual characteristics.

c. Case histories of patients with Turner's syndrome from psychiatric hospitals in Denmark

No. 52, a 38-year-old single disability pensioner with karyotype 45,X. Height: 143 cm

She is the youngest of 10 siblings. She had constantly lived with her parents until their death when she was 35 years old. Since then she has been living at a residential home for the mentally disordered. She is described as a mentally very immature and somewhat anxious person of border-line intelligence. She has received a disability pension for several years on account of aortic stenosis and hypertension, for which she has been operated.

After a period of tiredness, decreased appetite and dysphoria, she was admitted to a medical ward at the age of 37. She was seen by a psychiatrist on account of her anxiety and dysphoria, and referred to a psychiatric hospital. She was, however, discharged the following day as the psychiatrists considered her anxiety and depression due to her stay at the medical ward.

Physical examination shows a 143 cm tall, obese woman who weighs 60 kg. She has a slight thoracic kyphoscoliosis and a short, broad neck. There is no pubic hair and scanty axillary hair growth and very small mammae.

Diagnosis: Depressive hysterical neurosis.

No. 53, a 21-year-old single trainee with karyotype 45,X/46,XX. Height: Unknown

The father is an accountant. The parents and an 11-year-old sister are healthy. The patient's relations with her parents, sister and other people have always been good.

She left school from the 10th class at the age of 17 and spent a year at a youth school. She then began training at a day nursery, but she was considered mentally too immature and was recommended for further school education. With financial support from a rehabilitation centre she passed the school-leaving examination of a »realskole« and was subsequently admitted to the grammar

school with a view to passing the university entrance examination. It is her plan to resume her training as a children's nurse later on.

She has always had many interests such as theatre, films and literature, and she has several friends. She has been considered mentally immature.

At the age of 19, due to depression she was admitted to a psychiatric hospital for eight weeks. She had self-reproaches and self-disparaging ideas. She had been crying a lot and had been sleeping badly.

She responded well to treatment with antidepressive drugs and was discharged after two weeks. A few days after discharge she was, however, crying, anxious and depressed again, and treatment was continued on an out-patient basis with antidepressive and psychotropic drugs.

She was admitted to the psychiatric hospital again two months after getting a boy friend. She had developed obsessional ideas about her sterility, and she had ideas that her boy friend and her family were not adequately informed of her sterility.

On admission she was appealing, hysterically crying and anxious. During this admission the treatment with psychotropic drugs was discontinued and paedagogical and supportive psychotherapeutic treatment was given with good results. She was discharged after three weeks to continue as an out-patient. Six months later she was admitted to the psychiatric hospital for the third time on account of depression and anxiety. She was worrying very much about the fact that she could not have children, and she was in doubt as to whether she could love men, or whether she actually preferred women. She was unconcentrated, dysphoric, mentally labile and support seeking. She was given supportive psychotherapy and antidepressive drugs and discharged after one month.

Conclusion of psychological testing by Alice Theilgaard: Full Scale IQ 104, Verbal 113, Performance 92. As far as personality is concerned she appears very childish with labile affects and a tendency to mood changes, especially in dysphoric direction. There are problems concerning full acceptance of an adult feminine role.

The diagnoses were: Psychogenic depression and Turner's syndrome.

No. 54, a 4-year-old girl with karyotype 45,X. Height: 100 cm

The father, who is an engineer, was 36 and the mother 31 years old when the patient was born. The patient is number three of four siblings, she has an elder brother, an elder sister and a younger brother.

She developed normally until she was 4 months old when she got a fit of remoteness and trembling due to hypoglycaemia. She has since been treated for hypoglycaemia and has only had occasional fits of remoteness. Electroencephalogram as well as neurological examination have shown normal conditions.

The mother thinks that her daughter's retardation in development began after the hypoglycaemic fits from the age of 4 months. She has been retarded physically as well as mentally. She was able to walk alone at the age of 20 months, she began to say words at the age of 3, but she has now, at the age of 4, no language.

She plays with toys according to her age. She prefers to play alone or together with the mother, and it is rarely possible to make her play with other children. She is for the most part happy and contented, but she easily becomes restless and aggressive or tearful and sad if anything goes against her. On such occasions she flies into a temper. There are often periods of extreme restlessness. She often rolls her head from side to side and jumps up and down.

She was admitted to a child psychiatric hospital at the age of 5 with a presumptive diagnosis of child psychosis.

During her stay at the psychiatric hospital, psychological testing with Leiter showed an IQ of 69. Testing with Minnesota indicated an IQ below 50. The conclusion was that she appeared definitely mentally retarded, her function varied from border-line to severe mental retardation.

After treatment as a day-patient at the child psychiatric hospital for two months she appeared much happier, it was easier to get into contact with her. If demands upon her became too heavy, she might, however, appear autistic. She loved to sit on someone's lap and be caressed. Contact with other children was not very good, she would get furious if she was teased. Her speech was slurred, but she might say sentences of up to five words. She was cleanly.

Physical examination shows a 100 cm tall girl with no signs of Turner's syndrome, except for a high, narrow palate and pseudo-oedema of the back of the feet.

The diagnosis was: Mental retardation of moderate degree, and it was concluded that there were no signs of psychosis in her behaviour.

No. 55, a 28-year-old single disability pensioner with karyotype 45,X. Height: 145 cm

She is number three of five siblings. She left school at the age of 15 and was a factory worker for a couple of years. She later got a commercial training, attended a business school and had clerical employment till her present disorder and consequent disablement. She has received a disability pension for the past year.

The parents describe her as very reticent and lonely with a tendency to dysphoria. She has stated that she had been raped at the age of 7.

She did not present any signs of mental disorder until she was admitted to a psychiatric hospital for the first time at the age of 23. Since then she has been admitted altogether eight times to three different psychiatric hospitals and treated as an out-patient at intervals between these admissions.

At the age of 23, she left a job where she had worked together with several others and got a job at a switchboard where she was working alone. Shortly after getting this new employment, she began talking about feelings of persecution concerning her work, and one day she told her parents that she felt everybody persecuted and slandered her. She had the feeling that the house was burning, and she asked her parents to call the police because she was convinced she had committed a murder.

At the psychiatric hospital she presented ideas of persecution, and during the first admission she was described as immature, anxious and dependent. She said that she often felt that she was a man in the upper part of her body and a woman in the lower part. She felt compelled to be aggressive, occasionally erotically so, towards women.

She was discharged as cured, but during the subsequent five years she was admitted to psychiatric hospitals seven times, usually for depression and once for suicidal attempt.

The following diagnoses were made during these admissions: Paranoid psychosis, reactive depression, character deviation, psychogenic psychosis, suicidal attempt. She has been treated with different psychotropic drugs, including antidepressive drugs. She was given a disability pension at the age of 28 on account of her mental disorder and inability to keep a job.

No. 56, a 36-year-old married disability pensioner with karyotype 45,X/46,XX/47,XXX. Height: 154 cm

She is an only child, her parents were divorced when she was 3 years old, after which she was brought up by her paternal grandparents. She has had some connection with her father, but not with her mother. Her mother had previously been admitted to a psychiatric hospital, but the type of her mental disorder is unknown.

She was overprotected by her grandparents and very much tied to her grandmother. She has always been somewhat immature, sensitive and dependent on others.

She made fairly good progress at school, she left school at the age of 14. She was employed as a machinist till she got a disability pension on account of her present mental disorder. She had hitherto worked very steadily and had been at the same factory for 10 years.

She married at the age of 35 after her grandparents had died, and her marriage has been fairly happy. She has, however, very few friends, and she is very lonely.

At the age of 28 she was admitted to a psychiatric hospital for the first time for a depression in relation to the illness and hospitalization of her grandmother, a fact that she worried so much about that she had to be admitted to a psychiatric hospital. The diagnosis at that time was psychogenic depression. She was cured

and discharged after one and a half months.

At the age of 33, after her grandmother's death, she again developed a state of anxiety and depression and was admitted to a psychiatric hospital where she stayed for three weeks. The diagnoses were again: Psychogenic depression and psychoinfantilism.

At the age of 34, after a year of living alone, she was admitted to a psychiatric hospital for the third time. She was anxious and depressed with ideas of persecution. She was afraid of being together with others. She was discharged after two months with the diagnoses psychogenic depression and psychoinfantilism.

From the age of 35 to the age of 36, she has had three brief admissions to psychiatric hospitals for anxiety, depression and mild paranoid ideas, and the diagnoses made during the last admissions are: Anxiety neurosis and observation for paranoia.

Physical examination shows a 154 cm tall woman who weighs 60 kg and is slightly obese. She has a short neck, but there are otherwise no signs of Turner's syndrome.

No. 57, a 53-year-old single disability pensioner with karyotype 45,X. Height: 140 cm

The father, who owned a paper factory, was 26 years old when the patient was born, and the mother was 32 years old. The mother was admitted to a mental hospital at the age of 82 and until her death on account of paranoid psychosis and arteriosclerotic dementia.

The patient is number one of four siblings, she has two brothers and a sister. She was overprotected and isolated at home. Her parents belonged to a fanatical religious sect, and they led very isolated lives.

She made good progress at school and moved to secondary school at the age of 13, but left without an examination. She never had any friends and never went in for any activities outside her home. This was, however, mainly due to the fact that she was not allowed to participate in such activities.

She lived alone with her mother after her father's death. The mother became increasingly paranoid from the age of 60. During the development of the mother's psychosis, the patient became increasingly introvert, and she began to react violently if she felt hurt in any way. Her behaviour made it impossible for the mother to have a maid or any kind of help in the house.

At the age of 52 she was examined by a physician from an institution for mentally retarded patients, who made the diagnosis of severe mental retardation and recommended her admission to a hospital for the mentally retarded. The patient's brother protested, however, and she was placed in a residential home for the mentally disordered, but after a few weeks she was transferred to a mental hospital on account of noisy and violent behaviour.

On admission at the age of 53, she was psychoinfantile, somewhat anxious, but quiet and introvert. She appeared to be mentally retarded, and there were no psychotic symptoms.

During the first month of her stay at the psychiatric hospital, she was anxious and agitated. During the night she was occasionally very disturbed and screaming.

After six weeks at the psychiatric hospital, it became evident that her intelligence was normal as she was able to read and understand everything she read. She was quick and correct in arithmetic, and she wrote completely correctly to dictation. During treatment with psychotropic drugs she became more quiet and composed, feeling more secure.

She developed diabetes mellitus at the age of 55, and she died from meningitis secondary to infection with *pseudomonas aeruginosa* at the age of 59.

Physical examination at the age of 53 shows a 140 cm tall woman, weighing 46 kg, she is of slender build with a short neck. There is slight hypertelorism and exophthalmus. There is hardly any mamma development, there is scanty pubic hair and hair growth on the extremities. The hearing is slightly impaired.

The diagnoses at the psychiatric hospital were: Anxiety neurosis and Turner's syndrome.

No. 58, a 67-year-old widow with karyotype 45,X/46,XX/47,XXX. Height: 154 cm

The father, who was a founder, was 27 and the mother was 26 years old when the patient was born. The father was always hot-tempered, and he often beat the children. The parents' marriage was unhappy, and there was never any real feeling of security at home for the patient and her siblings.

The patient is number two of five siblings, a brother suffered from cerebrospinal syphilis. Another brother, who was somewhat asocial, committed suicide.

She did very well at the local village school.

She was engaged from the age of 19 to 22, and she gave birth to a boy by her fiancé at the age of 21; the boy died, however, at the age of 3 months from a bowel disorder. She broke off her relations with her boy friend because of his infidelity.

At the age of 27 she began working as a housekeeper for a 20-year-old man whom she married at the age of 28. The marriage was unhappy, and the patient never got on with her step-daughter, who was only one year younger than herself.

During childhood and youth the patient was a happy, quiet, easy-going and outspoken girl with no nervous symptoms. Her mental disorder did not appear till after her marriage at the age of 28. When she was with her step-daughter, she could get spells of severe trembling of her hands and feet together with feelings

of being suffocated and feelings of anxiety. These symptoms continued to increase until her first admission to the psychiatric hospital at the age of 52, and there had been a definite increase of all the symptoms around the age of 34 with the advent of the menopause.

On her first admission to a psychiatric hospital she had complained of palpitations, feelings of being suffocated, restlessness, sleeplessness, tiredness, anxiety and a fear of having a venereal disease.

During her four weeks' stay at the psychiatric hospital she appeared hysterical, dramatizing, anxious and mildly mentally retarded. She was bitter and critical towards her husband and step-daughter. The diagnosis was depressive neurosis.

She was admitted for the second time to a psychiatric hospital at the age of 64 on account of depression appearing secondary to her having moved to an apartment of very poor quality. She was again very dramatic and hysterical in her behaviour, but she also appeared depressed and weeping. The diagnoses were depressive neurosis and anxiety neurosis. Hypertension and obesity.

She did quite well for a few months after the second discharge from the hospital, but secondary to an operation for gall-bladder stones, she again developed a depression and talked about committing suicide. She was admitted to the psychiatric hospital for the third time under the same diagnosis as previously and discharged four weeks later after treatment with antidepressive drugs and sedatives.

Seven months later she was admitted to the psychiatric hospital for the fourth time on account of increasing anxiety, feelings of pressure in her chest, restlessness and complaints of being tired of everything. She was again given antidepressive treatment, she recovered quite well and was discharged after approximately four weeks. The diagnosis were depressive neurosis and observation for endogenous depression.

She was admitted to the psychiatric hospital for the fifth time at the age of 66 because of increasing anxiety, feelings of being suffocated and bizarre hypochondriac feelings. She was moderately depressed, and the depression was worse during the mornings clearing up somewhat during the day. The previous hysterical symptoms, which had been especially pronounced during the first admissions, and the symptoms suggestive of an endogenous depression had become much more pronounced.

Menstruation began at the age of 16, and the menopause appeared at the age of 34; since that age she has been gaining weight, and concurrently she has developed elephantiasis-like skin on both legs.

Physical examination at the age of 66 shows an obese woman measuring 154 cm and weighing 103 kg. She is completely bald (she had begun to lose her hair at the age of 57 and was bald at 59), and she has no axillary and pubic hair growth and no eyebrows. There is elephantiasis in both legs. The 5th finger on both hands is incurved. Electroencephalogram is normal.

d. Case histories of patients with Turner's syndrome found in Danish institutions for mentally retarded

No. 46, a 21-year-old patient with karyotype 45,X. Height: 150 cm

The father is a physician. The mother had icterus during the last part of the pregnancy. Delivery was protracted and involved the application of forceps and consequent asphyxia. She weighed 3,300 grams at birth.

Physical and mental development were severely retarded. Developmental quotient at the age of 3 was 53.

She was admitted to a hospital for the mentally retarded at the age of 9. It is difficult to get into contact with her, and she presents signs of psychosis. It is not possible to maintain any conversation with her. She requires help in dressing, but is cleanly.

Physical examination shows a 150 cm tall woman with pterygium colli, anti-mongoloid eye position, low-set, abnormally shaped ears, a slight thoracic kyphosis, no mamma development and scanty pubic hair.

The diagnoses at the institution for the mentally retarded are: Severe mental retardation, congenital encephalopathy, psychosis and Turner's syndrome.

No. 59, a 25-year-old single patient with karyotype 45,X/46,X,r(X). Height: 142 cm

The father, who is the manager of a cooperative store, was 27 years old, and the mother was 22 when the patient was born. She is number one of four siblings, she has two brothers and one sister.

She weighed 2,500 grams at birth; when a few days old she cried very much for several days and took no nourishment during this period. At the age of 2 she fell and hit her head, but she did not lose consciousness.

She was retarded in physical and mental development; she was 9 months old before she could sit alone and 14 months before she began walking. She began to say a few words at 2½ years of age.

At the age of 6 she suffered from intermittent, severe headaches followed by nausea and explosive vomiting; at that age she was examined by a psychiatrist at an institution for the mentally retarded on account of her presumed mental retardation. The mother said that she was a very nervous and restless girl, she was not able to play with anything or anybody. She had fits of unmotivated aggressions. EEG was normal, but neurological examination showed bilateral Babinski.

A Hetzer-Bühler test at the age of 6 showed mental development corresponding to the age of 3. She was very labile, but easy to get into emotional contact with. The mother wanted her to be admitted to the institution for the mentally retarded because she was very difficult to manage, restless, requiring

constant attention and was periodically aggressive. Her behaviour made it difficult to have guests and to keep servants. She was not cleanly, she could occasionally be awake most of the night, talking and singing. She might occasionally have fits of remoteness, anxiety and vomiting, but no actual epileptic fits.

On admission to the institution for the mentally retarded at the age of 8 she was described as a superficial, unconcentrated and happy girl. She was able to eat, but she had to be helped with most other things. She liked to tease other children, but she was usually good, cooperative and happy.

At the age of 10 she had her first epileptic fit, and she has been given anti-epileptic treatment since then. The results of EEG are shown in *Table 33*.

IQ at the age of 10, Brejning III, showed an IQ of 52. Psychological testing at the age of 16 with Leiter Performance Scale showed an IQ of 38 and intelligence level corresponding to the age of 5.

At school she has been described as happy, but nervous. She likes to sew, and she works well in the kitchen. She has no interest in occupations which demands creativity. She is not able to learn the most simple arithmetic, and she cannot read. She is very fond of talking about herself and her family, but she easily gets cross, and she cannot take any adversity. She is extremely concrete in her way of thinking. She is not interested in gymnastics, and if she is ordered about she pretends to be sick.

She has been at an institution for the mentally retarded since the age of 8.

Physical examination shows a 137 cm tall girl weighing 50 kg. She has an asymmetrical face, mild bilateral ptosis, broad thorax and cervical and thoracal kyphosis of the spine.

The diagnoses at the institution for the mentally retarded are: Moderate subnormality, epilepsy and Turner's syndrome.

No. 60, a 17-year-old patient with karyotype 45,X. Height: 127 cm

The parents are first cousins. The father is an unskilled labourer, he was 22 years old, and the mother was 21 years old when the patient was born. Both parents, as well as the mother's siblings, have a border-line intelligence. The patient has an elder brother and a younger sister. She weighed 2,650 grams at birth and was born three weeks before term. She was admitted to an institution for the mentally retarded at the age of 2 because of mental retardation as well as of very miserable social conditions.

At the age of 6 she had no language, she did not react when spoken to, she did not want to play, she had hardly any emotional contact with others. She required full care. Her developmental quotient was 13.

At the age of 13 she was described as impossible to occupy in the kindergarten, and she had no language. She was not interested in anything and she could not play alone or with others. She would often sit rocking to and fro,

or she would run round in circles. At times, she was aggressive and spat on people.

At the age of 17 she is restless, occasionally self-mutilating, often masturbating. She is not cleanly; she has hardly any emotional contact with others, she has no language, and she appears psychotic.

Physical examination shows a 127 cm tall girl with strabismus, epicanthus, cleft palate, a short neck, scanty mamma development, pectus excavatum and unilateral simian crease.

The diagnoses at the institution for the mentally retarded are: Severe mental retardation and Turner's syndrome.

No. 61, a 17-year-old single patient with karyotype 45,X/45,X,+ace. Height: 138 cm

The father, who owns a trout farm, was 23 years old, and the mother was 24 when the patient was born. The mother suffered from struma in puberty.

The patient has an elder sister and a younger brother.

The father had 11 siblings, two brothers and a sister died in infancy of unknown cause. A brother, who was mentally retarded, short of stature and who suffered from epilepsy, died at the age of 13.

At birth the patient weighed 2,500 grams. Physically and mentally, her development has always been retarded. She could speak fairly well at the age of 5-6. She has always been retarded in growth, and she is only 138 cm tall at the age of 17.

She had convulsions during a period with fever at the age of 8 months and again at 3 years. At the age of 3 she was admitted to a neurological ward where the diagnosis of epilepsy was made. She has been treated with antiepileptic drugs since the age of 3. At the age of 9 she developed convulsions when the parents had discontinued the antiepileptic drugs for a while. The electroencephalogram showed spike-dome activity localized bi-occipitally, but mainly in the left occipital region. The neurological examination showed normal conditions, except for somewhat atypical left plantar reflexes. There was decreased hearing, and the patient was using a hearing-aid. On admission to the neurological ward at the age of 9, it was mentioned that the patient was only developed according to the age of 3 or 4.

She has always been very restless, and up to the age of 4 she had no sense of danger during play. She is stubborn and very unstable in her way of playing, but her games are coloured by a marked sense of order and by obsession. Her games with dolls mainly consist of putting the dolls in a row after a special system. She never plays with dolls like other girls. She likes animals very much. She likes to be nice and feminine, and she often poses before a mirror.

She attends a kindergarten for mentally retarded children, and she is very

good at taking care of the younger children and of playing with them. When given a task, she perseveres at it till it is finished. She has tried to attend an ordinary school, but she was never able to live up to any of the demands. At the kindergarten for the mentally retarded children she is, however, still making progress.

Intelligence testing with Brejning III at the age of 8 showed an IQ of 45. Testing with Binet-Simon at the age of 11 showed an IQ of 31. At the age of 15 she was described as unconcentrated in her play and not able to distinguish between form and colour.

At the psychiatric examination at the age of 17, she is good, cooperative and easy to get into contact with. She is very immature with a mental age of 4-5. She understands simple questions, but her answers are difficult to understand. She seems happy to be interviewed, and she presents no psychotic or neurotic symptoms.

Physical examination at the age of 17 shows a 138 cm tall woman weighing 49 kg. The neck is short. There is a high pointed palate. There is decreased hearing, and she wears a hearing-aid. There is cubitus valgus and a simian crease in the right hand. The skin is loose with increased subcutis. The fingers are short, and there are crooked fifth fingers and the second and third fingers of both hands are webbed. There is no development of the secondary sexual characteristics.

Diagnoses: Severe mental retardation; epilepsy.

No. 62, a 24-year-old single patient with karyotype 45,X/45,X,+ace. Height: 140 cm

The father, a smallholder, was 26 years old and the mother 25 years old when the patient was born. The patient has one sister and two brothers.

One month after her birth it was evident to the parents that she was not developing normally, she did not thrive, and she was mentally retarded. She was admitted to an institution for the mentally retarded at the age of 3; at that age she was unable to understand her name - she could not talk, and she did not react when approached. She required help for dressing and eating. She did not wish to have any relations with other children.

She has had epileptic fits from the age of 3. At the age of 8 she was able to say a few words, and she loved to play a little with the other children.

At the age of 24 she is able to sew simple patterns and assist a little in the ward. She likes to have contact with the staff, but not so much with other patients, she never joins in their games. She is quiet, friendly and contented. Intelligence test ad modum Brejning III shows an IQ of 21.

Physical examination shows a 140 cm tall woman with strabismus and abducens, pseudo-paresis, a short neck, mongoloid eyes, no mamma

development, scanty axillary and pubic hair development, pigmented naevi and 15° deficit in full extension in the elbow joints.

The diagnoses at the institution for the mentally retarded are: Severe mental retardation, epilepsy and Turner's syndrome.

No. 63, a 5-year-old girl with karyotype 46,X,t(X;X)(p21;q13)(Xqter→Xp21::Xq13→Xqter). Height: Unknown

The father, who is a hospital porter, was 40 and the mother 27 years old when the patient was born. The mother has three siblings, one of her brothers has five children, one of whom suffers from Down's syndrome.

The patient has one elder brother. She was born before term and weighed only 1,800 grams at birth. There were no birth complications. The parents realized that she was not developing normally when she was 5 months, but nobody told them that she was mentally retarded until she was 15 months.

At the age of 5 the patient is severely mentally and physically retarded. She does not understand very much of what is going on around her. She has no language. She cries a lot. She has decreased hearing and uses a hearing-aid. Her behaviour corresponds to that of a child of 2.

She has been admitted to an institution for the mentally retarded for brief periods in order to relieve her parents from taking care of her, but she lives at home most of the time.

Physical examination shows a girl of short stature corresponding to the age of 2. She has a broad face, hypertelorism, strabismus, low-set ears, short neck, bilateral simian creases, oedema of the backs of the hands, funnel breast and curved laterally dislocated 5th fingers.

The diagnosis from the institution for mentally retarded is: Severe mental retardation.

No. 64, a 9-year-old girl with karyotype 45,X. Height: 118 cm

The father, who is an unskilled labourer, was 22 and the mother 20 years old when the patient was born. She is number three of four siblings, her eldest brother died 1 day old. She has one elder brother and one younger sister, both are healthy. She weighed 2,400 grams at birth. She was quite often ill as a baby, and she was admitted to the local hospital during the first year of life suffering from bronchitis, and at that time the diagnosis of Down's syndrome was made. At an examination at the age of 1 year she was not able to sit alone, and she made no sounds; it was doubtful if she could recognize her mother. She was a quiet baby who hardly ever cried.

At the age of 2 years she was making inarticulate sounds, but it was not possible to get into any contact with her. She did not recognize her parents, she

did not understand what the mother said. There were no signs of Down's syndrome. Electroencephalogram was normal.

At the age of 4, she was described as severely mentally retarded, but a very sweet and charming child. Emotional contact with her was quite good, she was happy. Her games were quite primitive and mainly consisted of looking at and feeling things.

At the age of 7, she began attending a kindergarten at an institution for the mentally retarded. She would bite her arms, and she was very restless, irritable and would often scream. She sometimes had to be tied to her bed, and she was considered severely mentally retarded.

The mother visited her a couple of times after admission to the institution for the mentally retarded when she was 2 years old, but she has never visited her since.

From the age of 7 till the age of 9 she often appeared to be very sad, crying and mutilating herself, taking her clothes off and biting herself. At present she is being treated with sedatives such as barbiturates and psychotropic drugs. She rarely contacts other children, and she has no language, except to say her own name. She can eat and drink without help, she has to be helped to wash herself, and she is cleanly.

She is considered to be psychotic by the staff at the institution.

Physical examination shows a 118 cm tall girl. She lacks the 3rd phalanx on the left 5th finger, but except for short stature there are no signs of Turner's syndrome.

The diagnoses at the institution for the mentally retarded are: Severe mental retardation, infantile psychosis and Turner's syndrome.

No. 65, a 63-year-old patient with karyotype 45,X/46,X,i(Xq). Height: 137 cm

The father was 45 and the mother 25 years old when the patient was born. She grew up with her mother and stepfather, and she has six younger half-siblings.

There is very little information of her childhood, except that the family moved from place to place and lived under very poor financial and social conditions. When she was admitted to the institution for the mentally retarded at the age of 18, she was poorly dressed and was verminous.

She went to an ordinary school for the compulsory seven years, she learned to read and write, but she was very poor at arithmetic and only learned to do sums in small figures.

She was referred to an institution for the mentally retarded at the age of 18 due to the social conditions and the fact that she could not be employed.

On admission the Brejning II test showed her to have an IQ of 55. She was later tested twice and found to have an IQ of 54 and 63, respectively.

During the first year at the institution she was described as a childish and good girl who gave no trouble, but was not able to be occupied, except with simple

work such as knitting and helping with easy jobs in the ward.

One year after admission she was home on vacation, the parents wished to keep her, but on account of the poor social conditions she was taken back to the institution under compulsion.

It was then decided that she should not be allowed to visit her parents any more.

At the age of 53 she developed diabetes mellitus, and she has been given oral antidiabetic treatment since that age.

At the age of 50 electroencephalogram showed occipital spikes with fast activity of ≤ 14 c/s with low amplitude. There were no focal signs, and she has not been given antiepileptic treatment.

At the age of 53 she is described as a nice, friendly and helpful woman who works half-time outside the institution cleaning and assisting a family. At that time it was considered possible to discharge her.

At the age of 55 she was given a hearing-aid on account of decreased hearing, and she was taught lip reading and transferred to a ward with fewer patients and less noise. After this transfer she seems quite well adjusted and well satisfied with her way of life at the institution and with her job outside it. She is quite helpful in the ward.

Physical examination shows a 127 cm tall woman with a broad neck, pterygium colli, slight ptosis, broad thorax, hypoplastic mammae, pigmented naevi and cubitus valgus.

The diagnoses at the institution for the mentally retarded are: Mild mental retardation, Turner's syndrome and diabetes mellitus.

No. 66, a 60-year-old patient with karyotype 45,X. Height: 125 cm

The father, who is a bricklayer, was 32 and the mother 30 years old when the patient was born. The patient is number 2 of 10 siblings. There is only scant information of her childhood.

She attended an ordinary school for the compulsory seven years, she learned to read, write and to add and subtract small figures, but she made little progress. Later she remained at home where she has been able to help a little with the housework. She was given a disability pension in her early thirties. Her mother died when the patient was 17 years old, and she stayed on with her father. A few years before she was admitted to an institution for the mentally retarded, a brother and a sister-in-law took over the home of birth, and she and her father lived with them. After this arrangement she became very difficult to get along with, especially for the sister-in-law who eventually got a nervous break-down on account of these difficulties. This was the reason for her referral to the institution for the mentally retarded at the age of 43. At that time she was described as a nice, friendly and mentally immature woman; her IQ was 50, and she had decreased hearing.

At the age of 45 she developed diabetes mellitus, and she has been treated with insulin since then, her diabetes is well regulated.

At the age of 50 she was described as friendly and obliging. She might, however, occasionally get angry, scolding and gesticulating.

At the age of 60 she is described as quite isolated from the other patients, she does not talk to them very much, and she may occasionally appear hallucinated.

Physical examination shows a 125 cm tall woman with pterygium colli, cubitus valgus, hypoplastic mammae and no pubic hair.

The diagnoses at the institution for the mentally retarded are: Moderate mental retardation (IQ 50), diabetes mellitus and Turner's syndrome.

No. 67, a 69-year-old single patient with karyotype 45,X/46,XX/47,XXX. Height: 147 cm

The father, who was an artist, was 40 years old, and the mother was 32 years old when the patient was born. She is an only child. A maternal cousin has a mentally retarded daughter.

Very little is known about the patient's childhood and parents. Her childhood development, physically and mentally, was retarded. She began walking at 3, and she was not able to speak in sentences till the age of 4. She went to an ordinary school, but had great difficulties in learning to read and write.

She was referred to an institution for the mentally retarded at the age of 22. She was placed in family care under this institution till the age of 39, and she has lived at the institution since that age. Intelligence testing with Brejning III at the age of 39 showed an IQ of 59.

During the first years at the institution for the mentally retarded, she was described as having a good and stable mood. She got along well with the other patients, and she was able to take care of herself. She was not interested in any occupation. She was described as easy to get along with, but stubborn.

At the age of 63 she was described as having good contact with the other patients, she was eager to visit friends, she kept in touch with her relatives and visited them occasionally. She played with dolls, and she liked to cut out pictures from magazines and look through illustrated papers and weeklies.

She suffered from nocturnal enuresis till around the age of 50. At the age of 53 she was treated for a duodenal ulcer, and at the age of 51 she had what was considered a small brain haemorrhage which left her with a left-sided facial paralysis, difficulties in speech and decreased strength in her left extremities. One year later she got a similar fit.

Physical examination at the age of 63 showed a 147 cm tall woman, weighing 75 kg. She had a sinistroconvex scoliosis. Neurological examination showed a left-sided Babinski and some spasticity. There were no Turner signs, except for short stature, and menstruation continued till the age of 51.

The diagnosis at the institution for the mentally retarded is: Moderate mental retardation.

Occasionally she goes to the movies with a girl friend or to a restaurant with her parents, but she never goes out with other young people. She stresses, however, that she does not miss it, and she never feels lonely; she is happy and satisfied with her way of life, and she has no difficulties in filling up her time.

Talking about work she says, however, that it was a disappointment that the rehabilitation centre could not teach her anything. She anticipates future problems if she does not get some kind of training. She is delighted to have been told at the present examination that we believe she would be able to manage a job, and we have suggested that she might start with a half-day job in a small shop in the local town.

In this connection she tells how she would have liked to have got a training as a nurse, an office clerk or a salesgirl.

She has never had menstruation, and her secondary sexual characteristics are very scanty. She has not been given hormone treatment. She has never had a boy friend, and she says with a smile that she has not missed this, she has never felt attracted to men at all. She does not think that she will ever marry or have children, and she is quite amused when I ask her. She stresses, however, in this connection that she does like children.

She says that her mood is good and stable. She is convinced that everybody considers she is a happy, satisfied person, and she can take quite a lot of stress before she becomes nervous or sad. It is easy for her to make contacts.

Her short stature does not bother her and never has. She has never been worried about the fact that she has no menstruation, she does not seem to realize that this means that she is not able to have children.

At the age of 12, she was admitted to a paediatric hospital where she underwent an operation for aortic stenosis. The only symptom of her heart affection was headache, which disappeared after the operation. Her physician has, however, told her that she should not work too hard on account of the operation for aortic stenosis.

No. 41, Tove, a 29-year-old single seamstress with karyotype 45,X/46,X,r(X). Height: 138 cm

Tove grew up in a provincial city and still lives there. Her father is an accountant, she has two sisters, 40 and 35 years old, respectively.

She often suffered from convulsions during periods with fever when she was a baby, and, up to the age of 6, she was several times admitted to a paediatric ward on this account. She has never had any epileptic symptoms or signs since childhood.

Her development in infancy and early childhood was normal, except for the fact that she learned to talk very late and was possibly also, by comparison with her two elder sisters, somewhat retarded in her physical development. She was always short of stature and very slight.

At the age of 45 she developed diabetes mellitus, and she has been treated with insulin since then, her diabetes is well regulated.

At the age of 50 she was described as friendly and obliging. She might, however, occasionally get angry, scolding and gesticulating.

At the age of 60 she is described as quite isolated from the other patients, she does not talk to them very much, and she may occasionally appear hallucinated.

Physical examination shows a 125 cm tall woman with pterygium colli, cubitus valgus, hypoplastic mammae and no pubic hair.

The diagnoses at the institution for the mentally retarded are: Moderate mental retardation (IQ 50), diabetes mellitus and Turner's syndrome.

No. 67, a 69-year-old single patient with karyotype 45,X/46,XX/47,XXX. Height: 147 cm

The father, who was an artist, was 40 years old, and the mother was 32 years old when the patient was born. She is an only child. A maternal cousin has a mentally retarded daughter.

Very little is known about the patient's childhood and parents. Her childhood development, physically and mentally, was retarded. She began walking at 3, and she was not able to speak in sentences till the age of 4. She went to an ordinary school, but had great difficulties in learning to read and write.

She was referred to an institution for the mentally retarded at the age of 22. She was placed in family care under this institution till the age of 39, and she has lived at the institution since that age. Intelligence testing with Brejning III at the age of 39 showed an IQ of 59.

During the first years at the institution for the mentally retarded, she was described as having a good and stable mood. She got along well with the other patients, and she was able to take care of herself. She was not interested in any occupation. She was described as easy to get along with, but stubborn.

At the age of 63 she was described as having good contact with the other patients, she was eager to visit friends, she kept in touch with her relatives and visited them occasionally. She played with dolls, and she liked to cut out pictures from magazines and look through illustrated papers and weeklies.

She suffered from nocturnal enuresis till around the age of 50. At the age of 53 she was treated for a duodenal ulcer, and at the age of 51 she had what was considered a small brain haemorrhage which left her with a left-sided facial paralysis, difficulties in speech and decreased strength in her left extremities. One year later she got a similar fit.

Physical examination at the age of 63 showed a 147 cm tall woman, weighing 75 kg. She had a sinistroconvex scoliosis. Neurological examination showed a left-sided Babinski and some spasticity. There were no Turner signs, except for short stature, and menstruation continued till the age of 51.

The diagnosis at the institution for the mentally retarded is: Moderate mental retardation.

began living with her boy friend, has become nervous, irritable and »hysterical«. The mother thinks this is due to sexual difficulties.

*No. 42, Helle, a 26-year-old single doctor's secretary with karyotype 45,X.
Height: 138 cm*

Helle grew up in the capital and still lives there. Her father is a chemist, now drawing an old-age pension. She is an only child.

She suffered from pneumonia when she was a few days old and spent the first two months of her life in a paediatric ward. The mother has told her that physically she developed very slowly. She was not able to sit without support till she was 1 year old, and she could not walk unaided till she was 2. Mentally she developed quite normally.

As a baby she had frequent, explosive vomiting, and there were severe eating problems. She remembers that during childhood she nearly always had a loathing for food. As a child she very often suffered from common colds and from inflammation of the throat; altogether, she was a sickly child.

Her relations with her parents were always good. She liked school and got on well with the other children, but she never had any real friends.

She had no difficulties at school, except in arithmetic which she has always found virtually incomprehensible. She was about average, or slightly above average, in all other subjects, and she got her university entrance examination with average marks.

She has always read a lot, but apart from this, she has had no spare time interests, and she has never gone in for any sports. At school she had difficulties in gymnastics.

The teachers describe Helle as a pupil who did well and never had problems of any kind.

After passing her university entrance examination at the age of 21, she started studying French and philosophy at the University of Copenhagen, but having failed in both examinations, stopped after two years. It is her experience that it is much more difficult to study at the university than at school. She was too much on her own, she had no friends.

After leaving the university, she took a one year course as medical secretary, which she completed without difficulties. During the past two years, she has had a number of temporary jobs, but never any permanent employment. She was quite happy in a recent job in a pathological department where the work was not so forced, whereas she had had some difficulties in a medical department where the working pace had been too much for her.

It worries her that she has not been able to get permanent employment. It is her impression that most employers begin to have misgivings when they see how short she is (138 cm), and when they hear that she has been a secretary for two years without ever having had permanent employment.

did not understand what the mother said. There were no signs of Down's syndrome. Electroencephalogram was normal.

At the age of 4, she was described as severely mentally retarded, but a very sweet and charming child. Emotional contact with her was quite good, she was happy. Her games were quite primitive and mainly consisted of looking at and feeling things.

At the age of 7, she began attending a kindergarten at an institution for the mentally retarded. She would bite her arms, and she was very restless, irritable and would often scream. She sometimes had to be tied to her bed, and she was considered severely mentally retarded.

The mother visited her a couple of times after admission to the institution for the mentally retarded when she was 2 years old, but she has never visited her since.

From the age of 7 till the age of 9 she often appeared to be very sad, crying and mutilating herself, taking her clothes off and biting herself. At present she is being treated with sedatives such as barbiturates and psychotropic drugs. She rarely contacts other children, and she has no language, except to say her own name. She can eat and drink without help, she has to be helped to wash herself, and she is cleanly.

She is considered to be psychotic by the staff at the institution.

Physical examination shows a 118 cm tall girl. She lacks the 3rd phalanx on the left 5th finger, but except for short stature there are no signs of Turner's syndrome.

The diagnoses at the institution for the mentally retarded are: Severe mental retardation, infantile psychosis and Turner's syndrome.

No. 65, a 63-year-old patient with karyotype 45,X/46,X,i(Xq). Height: 137 cm

The father was 45 and the mother 25 years old when the patient was born. She grew up with her mother and stepfather, and she has six younger half-siblings.

There is very little information of her childhood, except that the family moved from place to place and lived under very poor financial and social conditions. When she was admitted to the institution for the mentally retarded at the age of 18, she was poorly dressed and was verminous.

She went to an ordinary school for the compulsory seven years, she learned to read and write, but she was very poor at arithmetic and only learned to do sums in small figures.

She was referred to an institution for the mentally retarded at the age of 18 due to the social conditions and the fact that she could not be employed.

On admission the Brejning II test showed her to have an IQ of 55. She was later tested twice and found to have an IQ of 54 and 63, respectively.

During the first year at the institution she was described as a childish and good girl who gave no trouble, but was not able to be occupied, except with simple

likes school, and she is now in the 6th form and plans to work for the university entrance examination.

The teachers describe Inge as a clever and happy girl who is good at every subject and gets on well with the other children and with the teachers.

She has no plans for the future, but when I ask her she says that she would like to be an actress, and the mother says that this is something Inge talks about very often. She has also considered training as a kindergarten teacher or a children's nurse as she is very fond of children.

She has several interests outside school, she plays the flute, she sings in a school choir, she reads a lot, she is helpful about the house, and she is interested in needlework. The mother says that she never has to ask her to do anything, she always takes the initiative herself. She is extrovert and makes friends easily. She is often one who takes the initiative to make contacts when the family travels abroad, and the mother says that everybody falls for her.

Interview with the 14-year-old sister, Lone, three months after the examination of Inge

Lone, who is in the top form of a »realskole«, says very determinedly that she is not going to continue school any longer than to the end of this year. She does not like the teachers, the other children or the school work. She is tired of school. Her best subject is mathematics, but in physics she expects to get zero. Her parents say that she is well-liked by the teachers and the other children. She is doing quite well in all subjects, but for the past year she has been in strong opposition to practically everything and everybody. She has a tendency to shut herself up and become dysphoric. The parents have been worried about her development during puberty.

Lone says that she has no idea about what her future occupation is to be, she is not interested in anything particular. The parents tell how she has recently talked about becoming a laboratory assistant, but this she does not mention at the interview.

The parents think that the very strong puberty reaction of Lone is to some extent a reaction against the extreme opposite to what she sees in her sister Inge, who is an extrovert, happy, affectionate, well balanced, conscientious and hard-working girl who is well-liked by everybody, and who openly displays her affection towards the parents, especially towards her father to whom Lone hardly speaks, and towards whom she is in great opposition.

good at taking care of the younger children and of playing with them. When given a task, she perseveres at it till it is finished. She has tried to attend an ordinary school, but she was never able to live up to any of the demands. At the kindergarten for the mentally retarded children she is, however, still making progress.

Intelligence testing with Brejning III at the age of 8 showed an IQ of 45. Testing with Binet-Simon at the age of 11 showed an IQ of 31. At the age of 15 she was described as unconcentrated in her play and not able to distinguish between form and colour.

At the psychiatric examination at the age of 17, she is good, cooperative and easy to get into contact with. She is very immature with a mental age of 4-5. She understands simple questions, but her answers are difficult to understand. She seems happy to be interviewed, and she presents no psychotic or neurotic symptoms.

Physical examination at the age of 17 shows a 138 cm tall woman weighing 49 kg. The neck is short. There is a high pointed palate. There is decreased hearing, and she wears a hearing-aid. There is cubitus valgus and a simian crease in the right hand. The skin is loose with increased subcutis. The fingers are short, and there are crooked fifth fingers and the second and third fingers of both hands are webbed. There is no development of the secondary sexual characteristics.

Diagnoses: Severe mental retardation; epilepsy.

No. 62, a 24-year-old single patient with karyotype 45,X/45,X,+ace. Height: 140 cm

The father, a smallholder, was 26 years old and the mother 25 years old when the patient was born. The patient has one sister and two brothers.

One month after her birth it was evident to the parents that she was not developing normally, she did not thrive, and she was mentally retarded. She was admitted to an institution for the mentally retarded at the age of 3; at that age she was unable to understand her name - she could not talk, and she did not react when approached. She required help for dressing and eating. She did not wish to have any relations with other children.

She has had epileptic fits from the age of 3. At the age of 8 she was able to say a few words, and she loved to play a little with the other children.

At the age of 24 she is able to sew simple patterns and assist a little in the ward. She likes to have contact with the staff, but not so much with other patients, she never joins in their games. She is quiet, friendly and contented. Intelligence test ad modum Brejning III shows an IQ of 21.

Physical examination shows a 140 cm tall woman with strabismus and abducens, pseudo-paresis, a short neck, mongoloid eyes, no mamma

No. 45, Karen, a 19-year-old single clerk with karyotype 45,X. Height: 141 cm

Karen grew up in the capital and still lives there. Her father is a fitter, she has three sisters, 20, 12 and 5 years old, respectively.

She grew up in a home which was marked by the parents' perpetual quarrels which finally led to their divorce. She says that in spite of this her childhood was relatively happy; she has always got on well with her mother.

She was a »blue child« at birth; she suffered from aortic stenosis and was twice operated at the age of 1 and 5 years for this affection. After the second operation there have not been complications of any kind, but she was not allowed to take part in gymnastics or any other sports at school. She liked school, but she had some difficulties in getting girl friends, but she always had at least one girl friend.

The teachers describe Karen as a good pupil who did well during the first four years at school, but from the 5th year she began to have great difficulties, especially in mathematics, and later she also got difficulties in other subjects. She was teased by the other children for her short stature, but she has always been on very good terms with the teachers, and she always appeared to be happy in the company of adults.

After leaving school at the age of 15, she helped her mother take care of her younger sisters for one year, after which she worked as a domestic servant with a family for six months, but the work was too much for her, and she was referred to a rehabilitation centre from where she was sent to a school for the handicapped for 10 months. She says that this was a great experience for her; she got several friends, and she improved her school knowledge considerably. She also learned typewriting, and after leaving school this spring she has had temporary employment at a bank for the past three weeks. She is doing quite well, but she hopes that the rehabilitation centre will find a clerical apprenticeship for her. She would have preferred to have become a kindergarten teacher or a children's nurse, but she realizes that she lacks the preliminary education for such training, and she will be quite satisfied to become a clerk like her sister.

She was given cyclic hormone treatment at the age of 15, and menstruation is regular during this treatment. She has never had a boy friend, and she has had no sexual relationship. From the interview it appears that her sexual libido is weak.

She still lives at home, but she says that she is not quite satisfied, she always has to help her mother, and she is thinking of leaving home and getting her own room as soon as she earns sufficient money to pay for it, and her mother approves. She has never had any special spare time interests; she recently attended a course in child nursing as she very much wanted to become a children's nurse. She has a few girl friends, she occasionally goes out with them to the movies or to dance. Approximately a year ago she was informed that she cannot have children. This was a hard blow for her as she loves children, but she is now

constant attention and was periodically aggressive. Her behaviour made it difficult to have guests and to keep servants. She was not cleanly, she could occasionally be awake most of the night, talking and singing. She might occasionally have fits of remoteness, anxiety and vomiting, but no actual epileptic fits.

On admission to the institution for the mentally retarded at the age of 8 she was described as a superficial, unconcentrated and happy girl. She was able to eat, but she had to be helped with most other things. She liked to tease other children, but she was usually good, cooperative and happy.

At the age of 10 she had her first epileptic fit, and she has been given anti-epileptic treatment since then. The results of EEG are shown in *Table 33*.

IQ at the age of 10, Brejning III, showed an IQ of 52. Psychological testing at the age of 16 with Leiter Performance Scale showed an IQ of 38 and intelligence level corresponding to the age of 5.

At school she has been described as happy, but nervous. She likes to sew, and she works well in the kitchen. She has no interest in occupations which demands creativity. She is not able to learn the most simple arithmetic, and she cannot read. She is very fond of talking about herself and her family, but she easily gets cross, and she cannot take any adversity. She is extremely concrete in her way of thinking. She is not interested in gymnastics, and if she is ordered about she pretends to be sick.

She has been at an institution for the mentally retarded since the age of 8.

Physical examination shows a 137 cm tall girl weighing 50 kg. She has an asymmetrical face, mild bilateral ptosis, broad thorax and cervical and thoracal kyphosis of the spine.

The diagnoses at the institution for the mentally retarded are: Moderate subnormality, epilepsy and Turner's syndrome.

No. 60, a 17-year-old patient with karyotype 45,X. Height: 127 cm

The parents are first cousins. The father is an unskilled labourer, he was 22 years old, and the mother was 21 years old when the patient was born. Both parents, as well as the mother's siblings, have a border-line intelligence. The patient has an elder brother and a younger sister. She weighed 2,650 grams at birth and was born three weeks before term. She was admitted to an institution for the mentally retarded at the age of 2 because of mental retardation as well as of very miserable social conditions.

At the age of 6 she had no language, she did not react when spoken to, she did not want to play, she had hardly any emotional contact with others. She required full care. Her developmental quotient was 13.

At the age of 13 she was described as impossible to occupy in the kindergarten, and she had no language. She was not interested in anything and she could not play alone or with others. She would often sit rocking to and fro,

Case No.	Age	Maternal Age	Paternal Age	Number of siblings	Parents	Siblings	Other relatives
102	28	22	30	3	—	—	—
103	25	31	30	2	—	Sister, stillborn.	Paternal aunt, mentally retarded.
104	27	39	63	3	Father, febris rheumatica. Mother, kidney disorder.	—	Maternal cousin, Down's syndrome. Paternal cousin, Down's syndrome.
105	24	38	41	9	Father, asthma. Mother, struma.	Two sisters, struma.	Two maternal aunts, struma.
106	18	27	32	0	—	—	—
107	10	22	33	1	—	—	Paternal aunt, diabetes mellitus.
108	18	31	33	2	Father, coronary occlusion. Mother, cholelithiasis.	—	—
109	12	26	54	3	Father, dyslexia. Mother, hemicrania.	Brother and sister, dyslexia.	Paternal cousin, polyarthritis. Paternal uncle, committed suicide.
110	17	27	29	4	—	Sister, stillborn.	Maternal aunt, epilepsy. Maternal uncle, hemicrania. Maternal grandmother, hemicrania. Paternal cousin has the karyotype 47,XY,+mar.
111	13	23	28	2	Father, stomach ulcer.	—	Maternal grandmother and great-grandmother, manic-depressive disorder.
112	9	32	29	1	Mother, hemicrania.	—	Maternal aunt, hemicrania. Maternal grandmother, hemicrania. Maternal aunt, struma.
113	21	28	42	2	Mother, poliomyelitis, stomach ulcer and ovary tumour.	—	Maternal aunt, diabetes mellitus.
114	22	31	32	1	Father, spells of anxiety.	Brother, epileptic fits as a child.	Maternal aunt, depression. Maternal cousin, schizophrenia.
115	21	26	33	2	—	—	—

of being suffocated and feelings of anxiety. These symptoms continued to increase until her first admission to the psychiatric hospital at the age of 52, and there had been a definite increase of all the symptoms around the age of 34 with the advent of the menopause.

On her first admission to a psychiatric hospital she had complained of palpitations, feelings of being suffocated, restlessness, sleeplessness, tiredness, anxiety and a fear of having a venereal disease.

During her four weeks' stay at the psychiatric hospital she appeared hysterical, dramatizing, anxious and mildly mentally retarded. She was bitter and critical towards her husband and step-daughter. The diagnosis was depressive neurosis.

She was admitted for the second time to a psychiatric hospital at the age of 64 on account of depression appearing secondary to her having moved to an apartment of very poor quality. She was again very dramatic and hysterical in her behaviour, but she also appeared depressed and weeping. The diagnoses were depressive neurosis and anxiety neurosis. Hypertension and obesity.

She did quite well for a few months after the second discharge from the hospital, but secondary to an operation for gall-bladder stones, she again developed a depression and talked about committing suicide. She was admitted to the psychiatric hospital for the third time under the same diagnosis as previously and discharged four weeks later after treatment with antidepressive drugs and sedatives.

Seven months later she was admitted to the psychiatric hospital for the fourth time on account of increasing anxiety, feelings of pressure in her chest, restlessness and complaints of being tired of everything. She was again given antidepressive treatment, she recovered quite well and was discharged after approximately four weeks. The diagnosis were depressive neurosis and observation for endogenous depression.

She was admitted to the psychiatric hospital for the fifth time at the age of 66 because of increasing anxiety, feelings of being suffocated and bizarre hypochondriac feelings. She was moderately depressed, and the depression was worse during the mornings clearing up somewhat during the day. The previous hysterical symptoms, which had been especially pronounced during the first admissions, and the symptoms suggestive of an endogenous depression had become much more pronounced.

Menstruation began at the age of 16, and the menopause appeared at the age of 34; since that age she has been gaining weight, and concurrently she has developed elephantiasis-like skin on both legs.

Physical examination at the age of 66 shows an obese woman measuring 154 cm and weighing 103 kg. She is completely bald (she had begun to lose her hair at the age of 57 and was bald at 59), and she has no axillary and pubic hair growth and no eyebrows. There is elephantiasis in both legs. The 5th finger on both hands is incurved. Electroencephalogram is normal.

due to the fact that everybody has always treated her according to her size and not according to her age, and at school they constantly tell her how childish and immature she is. She thinks that if they would treat her as a girl 17 years of age, she would actually live up to this and become more mature. She hopes this will happen when she leaves school and gets a job.

Grace has no special spare time interests, she does not read very much, she has never gone in for any sports outside school, and she only has a couple of girl friends.

No. 102, Helen, a 28-year-old married student of psychology. Height: 140 cm

Helen grew up in a small town, and she now lives in a provincial city. Her father is a farmer, she has three brothers, 27, 23 and 16 years old, respectively.

Except for her retarded growth, her childhood development was normal. Her relations with her parents and siblings have always been happy. She went to a village school like her three younger brothers and left school at the age of 16. She had no difficulties at school, her best subject was arithmetic, but she also liked gymnastics very much. She got on well with the other children and with the teachers, but she was teased because she was short of stature. After leaving school, she was employed for five months as a domestic servant in a house with three children; she liked this occupation and had no difficulties. She spent five months at a youth school before she started working for the school-leaving examination of a »realskole« at a night school. At the age of 20, she passed this examination with very good results. For a brief period she had employment at an office and then started on a course for laboratory technicians with support from the rehabilitation centre. She finished this course after five months. Subsequently she got a grant to study for the university entrance examination, and she passed this examination after two years with average marks.

She then spent five months working at a kindergarten and applied unsuccessfully for admission to the kindergarten seminary, there being too many other applicants. This was a disappointment for her, and she decided to study psychology instead. At present she has been studying psychology at the university for one year, and she likes it very much. She has many interests in common with her fellow students, and she feels that the study of psychology has given her insight into many problems.

She met her present husband when she was 20 years old and married when she was 21. Her marriage is harmonious and happy. They have many common interests and get along well, also in respect of their sexual relations. Her husband is a civil engineer, but has been unable to find employment since he qualified one year ago. Their financial circumstances are good, and they live in a house of their own.

They both love children, and they agreed to apply for permission to adopt a

and discharged after one and a half months.

At the age of 33, after her grandmother's death, she again developed a state of anxiety and depression and was admitted to a psychiatric hospital where she stayed for three weeks. The diagnoses were again: Psychogenic depression and psychoinfantilism.

At the age of 34, after a year of living alone, she was admitted to a psychiatric hospital for the third time. She was anxious and depressed with ideas of persecution. She was afraid of being together with others. She was discharged after two months with the diagnoses psychogenic depression and psychoinfantilism.

From the age of 35 to the age of 36, she has had three brief admissions to psychiatric hospitals for anxiety, depression and mild paranoid ideas, and the diagnoses made during the last admissions are: Anxiety neurosis and observation for paranoia.

Physical examination shows a 154 cm tall woman who weighs 60 kg and is slightly obese. She has a short neck, but there are otherwise no signs of Turner's syndrome.

No. 57, a 53-year-old single disability pensioner with karyotype 45,X. Height: 140 cm

The father, who owned a paper factory, was 26 years old when the patient was born, and the mother was 32 years old. The mother was admitted to a mental hospital at the age of 82 and until her death on account of paranoid psychosis and arteriosclerotic dementia.

The patient is number one of four siblings, she has two brothers and a sister. She was overprotected and isolated at home. Her parents belonged to a fanatical religious sect, and they led very isolated lives.

She made good progress at school and moved to secondary school at the age of 13, but left without an examination. She never had any friends and never went in for any activities outside her home. This was, however, mainly due to the fact that she was not allowed to participate in such activities.

She lived alone with her mother after her father's death. The mother became increasingly paranoid from the age of 60. During the development of the mother's psychosis, the patient became increasingly introvert, and she began to react violently if she felt hurt in any way. Her behaviour made it impossible for the mother to have a maid or any kind of help in the house.

At the age of 52 she was examined by a physician from an institution for mentally retarded patients, who made the diagnosis of severe mental retardation and recommended her admission to a hospital for the mentally retarded. The patient's brother protested, however, and she was placed in a residential home for the mentally disordered, but after a few weeks she was transferred to a mental hospital on account of noisy and violent behaviour.

owner, she has two elder sisters. Her relations with her parents and sisters are happy.

She began school at the age of 7, already able to read and write. She never had any difficulties at school. She was always among the best in her class. She passed the university entrance examination with high marks at the age of 18. She had good friends at school and got on well with the teachers.

At present she is studying Russian as the main subject at the university; she had chosen music as her subsidiary, but this she has now given up possibly in favour of history.

Menstruation was never spontaneous, but was regular during periods with cyclic hormone treatment.

She has always considered herself more immature than other girls of her age, and her short, slight figure has bothered her, people seldom take her to be anything like as old as she actually is. She has often wondered whether to consult a psychiatrist about her inferiority feelings, but has refrained for fear that this would mark her as different from everybody else, and she is also afraid of being put in a psychiatric register and of getting a diagnosis that will follow her all her life.

She had a boy friend for a couple of years, but he broke with her a year ago, and she has not yet got over it. She felt that they had a very good time together, sexually and otherwise, but when they had known each other a couple of years, he told her that he felt that his love for her had burned out, and that it was better they parted. She had to accept this, but she could not understand it, and she has never been able to understand why this happened. She feels that she may possibly not have been a satisfactory sexual partner.

She would very much like to resume hormone treatment as she had had for a number of years. It was discontinued three years ago on account of her somewhat low basal metabolism which the gynaecologist thought the hormone treatment might further reduce. For the past couple of years she has often felt extremely tired. She has increasing difficulties in learning new material at the university, and she often feels that she cannot study at all. She says with a smile that she really thinks she used to be quite clever, but at present she sometimes doubts whether her intelligence is within the normal range.

She cannot understand that she is 27, she most often feels as if she was only 16 or 17 years old, a fact that bothers her quite a lot.

No. 105, Britt, a 24-year-old single domestic help. Height: 153 cm

Britt grew up in a small town, and she now lives in a provincial city. Her father is a small farmer, she has eight sisters aged 23 to 41, and a 21-year old brother.

She developed normally as a child – like her siblings. Her relations with her parents and siblings are good. She and her siblings went to a village school; they

The mother thinks that her daughter's retardation in development began after the hypoglycaemic fits from the age of 4 months. She has been retarded physically as well as mentally. She was able to walk alone at the age of 20 months, she began to say words at the age of 3, but she has now, at the age of 4, no language.

She plays with toys according to her age. She prefers to play alone or together with the mother, and it is rarely possible to make her play with other children. She is for the most part happy and contented, but she easily becomes restless and aggressive or tearful and sad if anything goes against her. On such occasions she flies into a temper. There are often periods of extreme restlessness. She often rolls her head from side to side and jumps up and down.

She was admitted to a child psychiatric hospital at the age of 5 with a presumptive diagnosis of child psychosis.

During her stay at the psychiatric hospital, psychological testing with Leiter showed an IQ of 69. Testing with Minnesota indicated an IQ below 50. The conclusion was that she appeared definitely mentally retarded, her function varied from border-line to severe mental retardation.

After treatment as a day-patient at the child psychiatric hospital for two months she appeared much happier, it was easier to get into contact with her. If demands upon her became too heavy, she might, however, appear autistic. She loved to sit on someone's lap and be caressed. Contact with other children was not very good, she would get furious if she was teased. Her speech was slurred, but she might say sentences of up to five words. She was cleanly.

Physical examination shows a 100 cm tall girl with no signs of Turner's syndrome, except for a high, narrow palate and pseudo-oedema of the back of the feet.

The diagnosis was: Mental retardation of moderate degree, and it was concluded that there were no signs of psychosis in her behaviour.

No. 55, a 28-year-old single disability pensioner with karyotype 45,X. Height: 145 cm

She is number three of five siblings. She left school at the age of 15 and was a factory worker for a couple of years. She later got a commercial training, attended a business school and had clerical employment till her present disorder and consequent disablement. She has received a disability pension for the past year.

The parents describe her as very reticent and lonely with a tendency to dysphoria. She has stated that she had been raped at the age of 7.

She did not present any signs of mental disorder until she was admitted to a psychiatric hospital for the first time at the age of 23. Since then she has been admitted altogether eight times to three different psychiatric hospitals and treated as an out-patient at intervals between these admissions.

depression would disappear if she could only have her menstruation.

She says that her »sexual life« has completely stopped. She still has sexual relation with her boy friend, but she does not get anything out of it. She feels »cold« and without any interest in it. She would rather not have sexual relations. She is often quarrelling with her friend, and she is not planning to marry him.

No. 106, Lisbeth, an 18-year-old single grammar school girl. Height: 158 cm

Lisbeth grew up in the capital and still lives there. Her father is an inspector, she is an only child.

Her relationship with her parents are good, especially with the mother who has her full confidence.

She developed normally as a child. At the age of 3 it was noticed that she had decreased hearing. She has had a hearing-aid since the age of 6, and she is hardly able to hear at all without it. Even with the hearing-aid, she has some difficulties, especially when she cannot see the lips of the person speaking to her.

She has had no difficulties at school, she has always been in the best part of her class, and she got good marks at the examination at the age of 17. She gets on very well with the teachers, and she has always had many friends.

She has never been teased at school for her short stature; at the moment she is 5 cm taller than her mother (158 cm), and she is quite satisfied with her height.

At the grammar school, she has had some difficulties in mathematics, physics and chemistry, and in these three subjects she is below the average of her class; she gets help in these subjects from an older pupil.

The teachers describe Lisbeth as a clever girl who has always got on well at school. She has decreased hearing and has some difficulties in mathematics, physics and chemistry. She gets on well with the other children as well as with the teachers.

Concerning her plans for the future, she says that she has not decided yet, but she has been thinking of training for employment at a play centre or of becoming a kindergarten teacher, but she has not made up her mind yet.

The mother says that Lisbeth is very active, she is always occupied. She spends considerable time over her homework, but she also reads a lot, apart from this she is an enthusiastic badminton player and coaches a group of children in badminton. She knits, sews and cooks and is very helpful about the house.

According to the mother she is mature and developed according to her age and according to the level of her friends. She has known several boys since the age of 16-17, and the mother says that she occasionally comes to her with problems concerning her relations with boys, especially in connection with petting.

Lisbeth says that she has not had sexual relations yet. She would like to wait untill she knows more about her »hormone disorder«. The non-appearance of

participating in discussions about menstruation, children and the possibility of becoming pregnant. She has complexes about sexual relations. She has tried sexual relations with a couple of boys, but she never got orgasm. She would like very much to have hormone treatment in order to get menstruation.

She is now 159 cm tall, she weighs 65 kg. She would like very much to lose at least 5 kg. She is quite satisfied with the development of her secondary sexual characteristics.

c. Case histories of patients with Turner's syndrome from psychiatric hospitals in Denmark

No. 52, a 38-year-old single disability pensioner with karyotype 45,X. Height: 143 cm

She is the youngest of 10 siblings. She had constantly lived with her parents until their death when she was 35 years old. Since then she has been living at a residential home for the mentally disordered. She is described as a mentally very immature and somewhat anxious person of border-line intelligence. She has received a disability pension for several years on account of aortic stenosis and hypertension, for which she has been operated.

After a period of tiredness, decreased appetite and dysphoria, she was admitted to a medical ward at the age of 37. She was seen by a psychiatrist on account of her anxiety and dysphoria, and referred to a psychiatric hospital. She was, however, discharged the following day as the psychiatrists considered her anxiety and depression due to her stay at the medical ward.

Physical examination shows a 143 cm tall, obese woman who weighs 60 kg. She has a slight thoracic kyphoscoliosis and a short, broad neck. There is no pubic hair and scanty axillary hair growth and very small mammae.

Diagnosis: Depressive hysterical neurosis.

No. 53, a 21-year-old single trainee with karyotype 45,X/46,XX. Height: Unknown

The father is an accountant. The parents and an 11-year-old sister are healthy. The patient's relations with her parents, sister and other people have always been good.

She left school from the 10th class at the age of 17 and spent a year at a youth school. She then began training at a day nursery, but she was considered mentally too immature and was recommended for further school education. With financial support from a rehabilitation centre she passed the school-leaving examination of a »realskole« and was subsequently admitted to the grammar

problems. She was much more difficult to manage than her two siblings up till the age of 5. From that age she developed like her siblings, except for growth retardation, a fact that has been discussed a lot at home.

She never had difficulties at school, she is now in the 2nd form at the grammar school and is doing quite well. She has never been very hard-working, and she might have been doing better if she had worked harder.

She was teased some during the first years at school because of her short stature. It bothered her, and she developed what she calls »inferiority complexes«. She never had any great difficulties in making friends, and she has always had a fairly good relationship with the teachers. She is planning to study medicine like her father.

From the age of 16, she began getting interested in boys, but she has never had a boy friend. She has had a single sexual relation without complications.

No. 109, Lisette, a 12-year-old girl. Height: 126 cm

Lisette lives in the capital. Her father is an unskilled labourer, she has two brothers, 20 and 18 years old, respectively, and a 15-year-old sister.

She developed like her siblings, except that she was later in walking. She began school at the age of 8, but she had great difficulties. She was constantly teased due to the fact that she was short of stature with short legs and a waddling gait. She was transferred to a special class for children with dyslexia, and here she has been quite happy. She gets along well with the other children, and she is a girl guide.

It is the impression of the parents that Lisette is somewhat immature for her age. She is rather precocious, but she is a happy and active girl. During the interview the father says several times, »I think Lisette actually should have been a boy«.

Lisette says that she loves animals, especially dogs, and she dreams about owning a dog or horse sometime, and when she grows up she would like to have a job that has something to do with animals.

Psychological examination at school with WISC shows an IQ of 79.

No. 110, Merete, a 17-year-old rehabilitee. Height: 146 cm

Merete grew up in the capital and still lives there. Her father is a bricklayer, she has two sisters, 19 and 12 years old, respectively, and a 10-year-old brother.

Merete was what the mother calls a »blue child« at birth. She was born with the umbilical cord wound twice around her neck, but she quickly recovered, and she developed normally as a child. From the age of 1 she was very active, more so than her siblings. She was somewhat slower in physical development than her siblings, and she has always been mentally immature for her age. She began

No. 114, Ingrid, a 22-year-old single student of building technician. Height: 161 cm

Ingrid grew up in a provincial city and still lives there. Her father is a writer, she has a 28-year-old brother.

She tells that she grew up in a home with good relations between the parents and between parents and children. The fact that the father suffers from anxiety and nervousness, has not had any great influence on her childhood.

She has the school-leaving examination of a »realskole«. It was her intention to continue like her brother, who got a university entrance examination, but she was tired of going to school. Her relations with the other pupils as well as with the teachers were very good, and she was above average in her class.

She never had many spare time interests as a child. She was, however, a girl guide and was quite active as such up to the age of 17-18. She was not very interested in sports, and she played with dolls quite late; she and another girl were knitting doll's clothes and selling it up to the age of 13-14. She does not consider that she has been overprotected by her parents.

After finishing school at the age of 17, she got training as a draughtsman and worked as such for one and a half years. She liked her job, but decided to get further education. She has been at a technical high school for the past two and a half years, and in one and a half years' time she will finish as a building technician. It is a rather demanding study; she tells that there are only 10-15 girls among 500 students. They go to school 8 hours a day, and they usually have 20 hours' homework per week. Only 40 per cent of the students complete the study during the scheduled four years. She hopes to finish within the four years. She lives at home and gets along well with her parents. She has a boy friend who studies at the same school as her, they are planning to marry when they have finished their studies.

Talking about sexual relations she gets quite shy and blushing; she says that it has given her some difficulties at the beginning when she suffered from dyspareunia; this has, however, disappeared by now, but she does not get any orgasm.

She has not been through any actual puberty, but it is her impression that she became interested in boys at the same time as other girls, around the age of 13-14, and she started going out with boys from that age. Growth stopped during puberty, and for some years she was considerably shorter than other girls of her age. She has, however, continued to grow, and by now she is 161 cm tall. Stature has not been any great problem; she was, however, somewhat worried when her growth stopped during puberty, but she has been especially worried about the fact that she has not got menstruation. She is quite satisfied with the development of her secondary sexual characteristics. Physicians have told her that hormone treatment should not be given until she wants to become pregnant.

She says that she has a fairly good and stable mood, but she cannot take very

No. 111, Sally, a 13-year-old girl. Height: 125 cm

Sally lives in the capital. Her father is a joiner, she has a 16-year-old brother and a 10-year-old sister.

She developed normally as a child and very similarly to her siblings, except for her retarded growth.

She has always been very happy at school, and she does well. She is above average in most subjects, except for reading, and the teachers like her very much. She has many friends in as well as outside school. She is never teased for her short stature.

The teachers describe Sally as a happy, contented, well adjusted and stable girl who gets on well with the other children as well as with the teachers. She is making good progress at school.

The parents describe her as the most loving, the most trusting, the nicest and most helpful of their three children. She is a very active girl. She has three-four pen friends, and she keeps up a lively correspondence with them. She goes in for gymnastics outside school, and she plays the guitar and always has something to do. She is considerably more active than any of her siblings.

She never talks about her short stature, but she sometimes worries about the fact that she cannot go in for swimming because she suffers from asthma, a disease which, however, does not otherwise bother her very much.

No. 112, Camilla, a 9-year-old girl. Height: 127 cm

Camilla lives in the capital. Her father is a postman, she has a 15-year-old sister.

She developed normally as a child, very much like her sister. She has always been a very active, happy and contented girl who is interested in everything that goes on around her. The mother says that Camilla is happy at school and doing fine. She gets on very well with the teachers as well as with the other children at school. She is a popular girl.

Camilla herself says, however, that she does not like going to school very much, the boys tease her because she is short of stature. She usually gets very angry when they tease her, and she often runs away crying.

She says that she has some difficulties in reading and writing, she works slowly in these two subjects whereas she has no difficulties in arithmetic.

The teachers say Camilla is hot-tempered. She makes fairly good progress, she seems well adjusted, and she gets on well with the teachers as well as with the other children.

During the past years she has had some kind of fits at home and at school; they may come on at any time of day and also sometimes at night. She describes these fits as a sudden feeling of dizziness inside her head, she feels sick, but she never faints. During these attacks, which last a few minutes, she always turns