A t(4p-;20+) FAMILY, Annemarie Sommer (Intr. by Stella B. Kontras), Ohio State Univ. Coll. of Med., Children's Hosp., Dept. of Ped., Columbus.

A child with multiple congenital anomalies was found to have a trisomy of the short arms of a number 4 chromosome. The patient was first seen at the age of 3 months and the following abnormal physical findings were present: deep set eyes and bilateral microphthalmia, micrognathia, posteriorly rotated ears with prominent helices and antihelices, hypoplastic male genitalia with a very small penis, severe flexion contracture of all the proximal interphalangeal joints and milder contractures of the hips and knee joints. Motor and mental retardation have been documented in the two year follow-up. Chromosome analysis utilizing the technique of Giemsa banding revealed that the patient's mother had a karyotype of 46,XX t(4p-;20p+) and was a balanced translocation carrier between a number 22 chromosome and the short arms of a number 4 chromosome. The patient had inherited the "translocation chromosome" - a composite of a number 22 and the short arms of a number 4 - from his mother. This resulted in an offspring effectively trisomic for the short arms of chromosome number 4 and exhibiting multiple congenital anomalies.

REDUCED HAIR SULPHUR IN A RECESSIVE SYNDROME OF "BRITTLE" HAIR, SHORT STATURE, INTELLECTUAL IMPAIRMENT AND DECREASED FERTILITY Lester Weiss, Charles E. Jackson, John H.L. Watson Henry Ford Hospital and Edsel B. Ford Inst., Detroit

Structural abnormalities of the hair are found in patients with chromosomal defects and certain other hereditary disorders. During a study of an Amish population in northern Indiana, 25 members of a kindred were found to have abnormal "brittle" hair. Hair from 20 affected individuals was studied by scanning electronmicroscopy (SEM), polarizing microscopy and neutron activation analysis. All 25 affected individuals were born to consanguineous parents, and could be traced to a single immigrant couple. Segregration analysis confirmed an automosal recessive mode of inheritance. Affected individuals were of shorter stature than their unaffected siblings. They also had mild mental impairment, but were functioning members of this rural society. Affected individuals had a marked reduction in fertility with an average of 0.81 children being born per marriage. Unaffected siblings had an average of 2.85 children per marriage. The hair had abnormal pseudotwisting when examined with phase contrast microscopy. It was unlike the hair in Menkes' syndrome, and serum copper was normal. SEM demonstrated a surface completely lacking in orderly scales and heavily fluted along the length of the fiber. In 11 affected individuals hair sulphur averaged 2.51% by weight (1.92 - 2.88) which is approximately ½ that of normal controls and obligate heterozygotes.

ANOTHER "MULTIPLE CONGENITAL ANOMALIES" SYNDROME - THE W. FAMILY, Annemarie Sommer, Mary A. Rathbun and Morris Battles (Intr. by Stella B. Kontras), Ohio State Univ. Coll. of Med., Children's Hospital, Dept. of Ped., Columbus.

Two siblings with a new association of multiple congenital anomalies were observed. These children, a boy and a girl, are the offspring of normal parents and they have one normal older brother. Both cases were admitted to Columbus Children's Hospital as neonates because of corneal clouding. Complete evaluation demonstrated the following anomalies: partial aniridia, congenital glaucoma, unilateral renal agenesis, frontal bossing, telecanthus and hypotonia. Both children have been observed over a period of 3 years (the boy) and 1 year (the girl). Despite accounting for visual handicap, the sibs have achieved all significant milestones 2-6 months later than can be expected. They resemble each other in physical appearance, but do not resemble either parent or their older brother.

A marker chromosome not thought to be associated with the anomalies is carried in this family. The father and both affected reported have one D group chromosome with enlarged satellites. Although the children have a clinical resemblance to the cases recently reported by DeHauwere, renal agenesis did not occur in DeHauwere's patients. The postulated mode of inheritance in our family is autosomal recessive and DeHauwere reported an autosomal dominant syndrome.

DEPIGMENTED LESIONS IN INCONTINENTIA PIGMENTI: A USEFUL DIAGNOSTIC SIGN. Henry E. Wiley, III, and Jaime L. Frias. Univ. of Fla. Col. of Med., Dept. of Ped., Gainesville (Intr. by Elia M. Ayoub).

A family has been evaluated in which the observation of depigmented lesions of the skin constituted the major clue for establishing the diagnosis of incontinentia pigmenti (IP) in the otherwise unaffected mother of the proband. Such lesions are not commonly appreciated as manifestations of IP. They usually form streaked, hypomelanotic macules in the calves but may be found in other areas as well. Their presence in adult relatives of children with IP may provide the only clue of the inherited character of the disease, as in this family. Hence, a search for such lesions is important prior to genetic counseling of these families.

FURTHER STUDIES OF THE TELECANTHUS-HYPOSPADIAS SYNDROME Robert L. Summitt, Robert S. Wilroy, Jr., Univ. of Tennessee Col. of Med., Dept. of Pediatrics, Memphis.

The telecanthus-hypospadias syndrome is characterized by widely spaced inner ocular canthi and hypospadias, along with various combinations of other anomalies. We have had the opportunity to evaluate a total of 8 families, including 12 affected males. Three families contain multiple affected sibs. In one family, three brothers, including apparently identical twins, also have bilateral cleft lip and palate, and multiple other anomalies.

In our series, the spectrum of associated anomalies includes mental retardation (8/12), cranial asymmetry (11/12), strabismus (7/12), cleft lip and palate (4/12), congenital heart disease (6/12), abnormalities of the urinary tract (4/12) and cryptorchidism (5/12). Mothers of affected males have demonstrated isolated telecanthus. The incidence of twinning seems to be increased in these families.

This condition appears to be inherited as a dominant trait with no well documented instance of male-to-male transmission. It is in all likelihood more common than reflected in the literature. Among patients who are ascertained on the basis of either cleft lip with or without cleft palate, widely spaced ocular canthi, or apparently isolated hypospadias, the telecanthus-hypospadias syndrome constitutes a definable entity for the purposes of prognosis and genetic counseling.

DYSMORPHOLOGY, POOR SPEECH AND DEVELOPMENTAL DELAY: A POSSIBLE TRIMETHADIONE TERATOGENIC SYNDROME. E. Zackai, F. Bass, B. Neiderer, W. Mellman. Depts. of Pediatrics, Human Genetics & Community Med., Univ. of Pa. Sch. of Med., Philadelphia, Pa.

We have observed 2 families, each with 2 siblings who have poor speech and developmental retardation, whose mothers took trimethadione during their pregnancies. The affected children have common dysmorphic features: irregular teeth, high arched palate, hypertelorism, v-shaped eyebrows, low-set and backward sloped ears with anteriorly folded helices, epicanthus, and micrognathia. Inconstant features include: short stature, VSD, inguinal hernia and myopia. The other pregnancies of these mothers were: in family I, a spontaneous abortion at 2 months gestation; in family II, 2 normal female births, 1 male stillborn at 7 months gestation, 2 male births who died in the neonatal period with multiple malformations.

Many similarities were noted between these patients and those described by German (Teratology 3: 369, 1970) who reported a high frequency of defects among the offspring of 4 mothers who took trimethadione during pregnancy.

Despite these observations, elucidation of the teratogenicity of trimethadione requires epidemiological analysis of a group of women who took this drug during pregnancy and their offspring.