

creases as in the case of the R and I crease types.

Dr. C. C. Plato, Gerontology Research Center, NICH, NIH, Baltimore City Hospitals, Baltimore, Maryland 21224, USA

### PENETRANCE OF GENE FOR ABSENT C-TRIRADIUS FROM MZ TWINS

H.W. KLOEPFER, PAOLO PARISI

*Department of Anatomy, Tulane University, New Orleans Louisiana, USA*  
*The Gregor Mendel Institute of Medical Genetics and Twin Research, Rome, Italy*

Among 59 sets of MZ male twins and 48 sets of MZ female twins from Italy, 7 male sets (11.9%) and 7 female sets (14.6%) had absent c-triradius on one or more palms; among 214 individuals who had a MZ twin, 19 (8.9%) had absent c-triradius in one or both palms. Due to small numbers these percentages are comparable to the occurrence of absent c-triradius found in 8.2% of 3946 Caucasians.

When one member of a set of MZ twins showed the trait in one or both palms, 35.7% (5/14) of the other members also showed the trait in one or both palms. When an individual showed the trait in one palm, 26.3% (5/19) of the other palms also showed the trait. These two estimates of penetrance combined give an average value of 30.3% (10/33) which is comparable to an estimate of 30% found in a study of 478 family units in which transmission was compatible with an autosomal dominant gene.

Dr. H.W. Kloepfer, Department of Anatomy, Tulane University, 1430 Tulane Avenue, New Orleans, Louisiana 70112, USA

### HERITABILITY STUDY ON SIZE OF THE PHYSIOLOGIC CUP OF THE OPTIC NERVE HEAD

J.T. SCHWARTZ, F.H. REULING, M. FEINLEIB

*National Eye Institute, NIH, Bethesda, Maryland, USA*  
*National Heart and Lung Institute, NIH, Bethesda, Maryland, USA*

Cupping of the optic nerve head is regarded as one of a triad of diagnostic signs associated with glaucoma. This study was undertaken to assess the role of genetic factors in determining size of the physiologic cup of the normal optic nerve head, as measured by a horizontal cup/disc ratio. Understanding the determinants of normal variation in size of the optic cup is important to our ultimate understanding of the determinants of pathologic change.

A sample of 37 pairs of MZ and 26 pairs of like-sex DZ twins, of age 15 years and older, was studied. Horizontal cup/disc ratio was estimated clinically by stereoscopic examination of the nerve head as obtained using the Allen-Thorpe contact lens at the Haag-Streit biomicroscope. Twin zygosity was determined by blood serotyping.

Differences between MZ and DZ samples with respect to intrapair variance and intraclass correlation coefficient were highly significant and were consistent with a major genetic influence on size of the normal physiologic cup. This finding of high heritability for measurements of cup diameter is in contrast to low heritability estimates found in a companion investigation on heritability of the effect of corticosteroids on intraocular pressure. Findings of the completed study on corticosteroid hypertension will also be cited. The protocol of the latter study was originally described at the First International Symposium on Twin Studies, at which time the study was still in progress.

J. Theodore Schwartz, M.D., National Eye Institute, NIH, Bethesda, Maryland 20014, USA