CONTENTS

N. KH. **ARUTIUNIAN** and M. M. **MANUKIAN:** Torsion of circular rods of varying diameter under conditions of unsteady creep . . . 1

G. I. BARENBLATT: On some basic ideas of the theory of equilibrium cracks, forming during brittle fracture 21

N. N. **BOGOLIUBOV,** B. V. **MEDVEDEV** and A. N. **TAVKHELIDZE:** The application of the methods of N. I. Muskhelishvili to the solution of singular integral equations in quantum field theory 39

V. V. **BOLOTIN**: An asymptotic method for the study of the problem of eigenvalues for rectangular regions 56

CHEN LIN-SI: On the problem of stress concentrations in the presence of many holes 69

K. F. **CHERNYKH:** Conjugate problems of the theory of thin shells 74

GUSTAVO COLONNETTI: The interpretation of plastic deformations as heredity phenomena 80

I. I. **DANILIUK**: On the theory of one-dimensional singular equations 93

DU **CHING-HUA:** The two-dimensional problems of the nonhomogeneous isotropic medium 104

G. Iu. **DZHANELIDZE:** Problems of the theory of elasticity of anisotropic media, relating to the plane 109

F. D. **GAKHOV**: On new types of integral equations soluble in closed form 118

A. L. **GOL'DENVEIZER:** Geometric criteria for the membrane state of stress in elastic thin shells 133

A. E. **GREEN:** Torsional vibrations of an initially stressed circular cylinder 148

R. **HILL:** Bifurcation and uniqueness in non-linear mechanics of continua 155

PHILIP G. **HODGE JR.:** A comparison of yield conditions in the theory of plastic shells 165

NICHOLAS J. **HOFF:** The effect of meridian curvature on the influence coefficients of thin spherical shells (A study of the accuracy of the Geckeler approximation) 178

D. D. IVLEV: On the theory of transient creep 198

L. M. **KACHANOV:** Rupture time under creep conditions 202

A. I. **KALANDIIA:** On a method of solution of problems of the theory of elasticity for the semi-circle 219

S. **KALISKI:** The propagation of elasto-plastic waves in a half-space in a magnetic field for a perfect conductor 229

W. T. **KOITER:** An infinite row of parallel cracks in an infinite elastic sheet 246
M. **IA. LEONOV** and N. Iu. **SHVAIKO** : Introduction to the dislocation theory of elasto-plastic torsion 260
A. I. **LURE:** On the static geometric analogue of shell theory . . 267
G. K. **MIKHAILOV:** On the problem of the influence of capillarity on the flow of liquid in a porous medium to a rectilinear slope of a porous mass 275
R. D. **MINDLIN** : On the equations of motion of piezoelectric crystals 282
W. **NOWACKI** : On some dynamical problems of thermoelasticity . . 291
F. K. G. **ODQVIST:** A non-linear eigenvalue problem in the theory of creep 306
W. **OLSZAK** and S. **ZAHORSKI:** The notion of non-homogeneity as applied to a problem of continued plastic flow 311
W. **POGORZELSKI:** On the properties of a singular integral in space and their application to a system of singular integral equations 327
WILLIAM PRAGER: On the plastic analysis of sandwich structures 342
G. N. **PYKHTEEV:** On two representations of functions, analytic in the upper half-plane 350
J. R. M. **RADOK:** Plane problems of linear viscoelasticity . . . 359
ERIC REISSNER: On some variational theorems in elasticity . . . 370
G. N. **SAVIN:** The stress distribution in a thin shell with an arbitrary hole 382
B. R. SETH: Stability of finite deformation 406
G. S. **SHAPIRO:** On yield surfaces for ideally plastic shells 414
M. P. **SHEREMET'EV:** The solution of the equations of certain contact problems of the theory of elasticity (Equations of the Prandtl type) 419
D. I. **SHERMAN:** The elastic, heavy half-plane, weakened by holes of elliptic shape lying sufficiently close to its boundary . . . 440
M. G. **SLOBODIANSKII** : Estimates of natural frequencies of vibration of clamped plates of constant and variable thickness 473
V. I. **SMIRNOV:** On a certain class of isotropic congruences 483
I. N. **SNEDDON** and R. J. **TAIT:** On Lure's solution of the equations of thermoelastic equilibrium 497
V. V. **SOKOLOVSKII:** A problem of plasticity theory 513
L. N. **SRETENSKII:** Elastic waves arising from normal stresses applied to the surface of a half-space 519
I. IA. **SHTAERMAN:** Compression of elastic bodies touching along a straight segment 537
G. **1. TAYLOR** : Interfaces between viscous fluids in narrow passages 546

C. TRUESDELL: Stages in the development of the concept of stress 556
H. S. TSIEN: On the basic equations of soil dynamics 565
D. V. VAINBERG and A. L. SINIAVSKII: Approximate analysis of shells with holes by the methods of potential theory 570
I. N. VEKUA: A projective property of force and deflection fields 582
N. P. VEKUA: Linear integro-differential equations with small parameters for higher derivatives 592