METALLURGICAL ABSTRACTS

(GENERAL AND NON-FERROUS)

Volume 4 1937 Part 13

I.—PROPERTIES OF METALS

(Continued from pp. 581–591.)

***Mechanical Properties and Micro-Deformation of Single and Multi-Crystalline Specimens of Aluminium.** G. Welter (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 112–115).—[In German.] See *Met. Abs.*, this vol., p. 317.—S. G.

The Elimination of Gaseous Impurities from Aluminium. Georges Chaudron (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 253–264; discussion, 264–268; and *Bull. Assoc. Tech. Fonderie*, 1937, **11**, (10), 410–414; discussion, 414–415).—French Exchange Paper to the Institute of British Foundrymen; see *Met. Abs.*, this vol., p. 317.—S. G.

***Magnetic Susceptibility of Metallic Cerium.** L. F. Vereshagin, L. V. Schubnikov, and B. G. Lasarev (*Physikal. Z. Sowjetunion*, 1936, Special No. (June), 107–110).—See *Met. Abs.*, this vol., p. 74.—S. G.

***Mechanical Properties of Hard-Drawn Copper Wire Under Continuous Loading at Elevated Temperatures.** V. Jareš and L. Jeníček (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 17–20).—[In German.] See *Met. Abs.*, this vol., p. 318.—S. G.

***Influence of the Rate of Extension on the Tensile Properties of Materials. I.—Copper, Brass, Aluminium, and Duralumin at High Temperatures. II.—Duralumin, Lead, and Tin.** G. Welter and L. Oknowski (*Przemysl Chem.*, 1937, **21**, 81–87, 185–190).—See *Met. Abs.*, this vol., pp. 487 and 488.—S. G.

***The Relaxation of Copper at Normal and at Elevated Temperatures.** John Boyd (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 218–232; discussion, 233–234).—See *Met. Abs.*, this vol., p. 277.—S. G.

***Magnetic Properties of Supraconducting Metals and Alloys [Lead, Tin, Mercury, Lead–Thallium, Lead–Bismuth, Lead–Indium, Mercury–Cadmium].** L. W. Shubnikow, W. I. Chotkewitsch, J. D. Schepelew, and J. N. Rjabinin (*Physikal. Z. Sowjetunion*, 1936, Special No. (June), 39–66).—[In German.] See *Met. Abs.*, this vol., p. 33.—S. G.

Absorption of Cosmic Rays in Thin Sheets of Lead and Copper. A. Gandin (*Ricerca scientifica*, 1936, [ii], 2, (3/4), 220–222).—D. R. H.

***Investigation of the Heat Effect in Magnetic Transformations. IV.—Nickel.** H. v. Steinwehr and A. Schulze (*Physikal. Z.*, 1936, **37**, (21), 753–757).—See *Met. Abs.*, this vol., p. 1.—S. G.

***Inertness and Chemical Activity of the Rare Gases. IX.—Thermal Decomposition of the Compounds of Platinum and Helium.** Horacio Damianovich and José Piazza (*Anales inst. investigaciones cient. tecnol.* (*Univ. nac. litoral, Santa Fé*), 1934–1936, (5/6), 54–61).—See *Met. Abs.*, this vol., p. 143.—S. G.

***Inertness and Chemical Activity of the Rare Gases. X.—Modification of the Density of Platinum by the Chemical and Physico-Chemical Action of Helium, and the Influence of Temperature on the Density of the Product Formed.** José Piazza and Horacio Damianovich (*Anales inst. investigaciones cient. tecnol.* (*Univ. nac. litoral, Santa Fé*), 1934–1936, (5/6), 62–65).—See *Met. Abs.*, this vol., p. 132.—S. G.

* Denotes a paper describing the results of original research.
† Denotes a first-class critical review.

*Inertness and Chemical Activity of the Rare Gases. XIII.—Density and Thermal Decomposition of the System Palladium–Helium. Horacio Damianovich and José Piazza (*Anales inst. investigaciones cient. tecnol.* (*Univ. nac. litoral, Santa Fé*), 1934–1936, (5/6), 66–70).—See *Met. Abs.*, this vol., p. 383. —S. G.

*On Blistering Silver. E. Raub, F. Distel, and A. Schall (*Mitt. Forschungsinst. Edelmetalle*, 1937, 11, (6), 43–52).—See *Met. Abs.*, 1936, 3, 444.—A. R. P.

*Selective Reflection of Silver and Zinc in Polarized Light and the Selective Photoelectric Effect. F. Hlučka (*Z. Physik*, 1936, 103, (3/4), 237–245).—S. G.

*Impure Tin, in the Form of Glossy, Polished Foil and Without External Contaminations, Becomes Effervescent in Dilute Hydrochloric and Sulphuric Acids. In Thick Sections It Remains Quiescent. Paul Ronceray (*Bull. Soc. chim. France*, 1936, [v], 3, 1290–1294).—S. G.

*The Velocity of Polymorphic Transformations. IV.—The Influence of Mechanical Deformation on Transition Velocities in Polymorphic Metals. II.—The Influence of Metallic Impurities [on the Transition from White to Grey Tin].—1. Ernst Cohen and A. K. W. A. van Lieshout (*Z. physikal. Chem.*, 1936, [A], 177, (5), 331–336).—See *Met. Abs.*, 1936, 3, 494.—L. E. P.

Diagram of the Recrystallization of Zinc. J. Czochralski and O. Lubinkowski (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 101–103).—[In English.] See *Met. Abs.*, this vol., p. 279.—S. G.

Plastic Deformation. E. Siebel (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 131–133).—[In German.]—S. G.

*Kinetics of the Plastic Deformation of Crystals. M. O. Kornfeld (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, 7, (3), 463–471).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 79.—N. A.

The Phenomenon of Creep Recovery. H. J. Tapsell (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 1–3).—[In English.] See *Met. Abs.*, this vol., p. 280.—S. G.

The Mechanism of the Creep of Metals. C. L. Clark and A. E. White (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 3–4).—[In English.] See *Met. Abs.*, this vol., p. 281.—S. G.

Creep of Metals. A. Nadai (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 4–6).—[In English.] See *Met. Abs.*, this vol., p. 281.—S. G.

Creep and Engineering Design. R. W. Bailey (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 15–17).—[In English.] See *Met. Abs.*, this vol., p. 281.—S. G.

The Surface Temperature of Sliding Solids and Its Influence on Surface Flow and Wear. F. P. Bowden and T. P. Hughes (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 176–178).—[In English.] See also *Met. Abs.*, this vol., p. 187.—S. G.

[Discussion on] Behaviour of Metals (Mechanical and Chemical) as Dependent upon Temperature, Particularly in Regard to High Temperature. —— (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 181–199).—A brief report of the discussions on 24 papers; abstracts of those papers of non-ferrous interest have appeared in *Met. Abs.*, this vol.—S. G.

†Properties of Heat-Insulating Materials. H. Reiher (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 618–621).—[In German.] See *Met. Abs.*, this vol., p. 180.—S. G.

The Rate of Oxidation of Molten Metals. A. Krupkowski (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 38–39).—[In French.] See *Met. Abs.*, this vol., p. 281.—S. G.

The Optics of Thin Metal Films. H. Wolter (*Z. Physik*, 1937, 106, (5/6), 269).—Correction to W.'s paper (*Met. Abs.*, this vol., p. 322).—D. S.

*†**The [Electrical] Conductance of Thin Metal Films and the Superficial Conductivity of Metals.** E. Perucca (*Nuovo cimento*, 1934, **11**, 531–541).—See *Met. Abs.*, 1935, **2**, 49, 636.—S. G.

***Temperature Coefficient of the Electrical Conductivity of Thin Metal Films.** Romolo Deaglio (*Nuovo cimento*, 1934, **11**, 547–549).—See *Met. Abs.*, 1935, **2**, 49.—S. G.

***Influence of Light and Heavy Hydrogen on the Selective Photoelectric Effect in the Alkali Metals.** W. Kluge and W. Uhlmann (*Z. tech. Physik*, 1936, **17**, (11), 431–436; and *Physikal. Z.*, 1936, **37**, (22/23), 857–862).—S. G.

***On the Properties of Metals at Very Low Temperatures.** L. Landau and I. Pomerantschusk (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, **7**, (3), 379–389).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 81—N. A.

***Electrical Conductivity of a Supraconducting [Tin] Sphere in the Intermediate State.** L. Shubnikov and I. Nakhutin (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, **7**, (4), 566).—[In Russian.] See abstract from an English source, *Met. Abs.*, this vol., p. 324.
—N. A.

Theory of Supraconductivity. L. D. Landau (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, **7**, (3), 371–378).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 181
—N. A.

II.—PROPERTIES OF ALLOYS

(Continued from pp. 691–624.)

Industrial Metallic Materials at Elevated Temperatures, with Special Reference to the Behaviour of Aluminium and Its Alloys. A. von Zeerleder and R. Irmann (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 23–26).—[In German.] See *Met. Abs.*, this vol., p. 328.—S. G.

***Duralumin Studied in Relation to the Rotating-Beam Endurance Limit.** C. Pizzuto (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 119–121).—[In English.] See *Met. Abs.*, this vol., p. 326.—S. G.

***Composition of the Quaternary Compound in the System Al–Cu–Mg–Si.** D. A. Petrov (*Zhurnal Fizicheskoy Khimii* (*J. Phys. Chem.*), 1937, **9**, (4), 522–527).—[In Russian.] See abstract from an English source, *Met. Abs.*, this vol., p. 378.—N. A.

***On the Mechanism of Age-Hardening in Al–$MgZn_2$ Alloys.** M. Gotô and Sadajiro Kokubo (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 111).—[In English.] See *Met. Abs.*, this vol., p. 327.—S. G.

***[Age-]Hardening of Silicon–Aluminium Alloys.** W. Helling (*Metallurgist* (Suppt. to *Engineer*), 1937, **11**, (June 25), 39–40).—Summarized from *Z. Metallkunde*, 1937, **29**, 25–28; see *Met. Abs.*, this vol., p. 138.—S. G.

***On the Modification of Aluminium Alloys.** M. Gotô and S. Sugiura (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 121–122).—[In English.] See *Met. Abs.*, this vol., p. 327.—S. G.

Notes on the Structure and Characteristics of Aluminium Alloys. H. C. Hall (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 283–313; discussion, 313–321; and *Aluminium and Non-Ferrous Rev.*, 1937, **2**, (9), 321–324; (10), 351–354).—See *Met. Abs.*, this vol., p. 325.—S. G.

Application of Physico-Thermal Methods to the Study of Light Alloys. Pierre Chevenard and Albert Portevin (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 105–109).—[In French.] See *Met. Abs.*, this vol., p. 328.
—S. G.

***X-Ray Study of a New Aviation Alloy in Connection with Mechanical Stressing.** Ph. Theodorides (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 71–74).—[In English.] See *Met. Abs.*, this vol., p. 283.—S. G.

Progress in Wrought Aluminium Alloys in Great Britain. S. L. Archbutt (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 116–117).—[In English.]—S. G.

Recent Progress in Aluminium Casting Alloys. A. G. C. Gwyer and H. G. Dyson (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 117–119).—[In English.]—S. G.

Development of Aluminium Alloys and Their Properties. A. v. Zeerleder (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 122–124).—[In German.] See *Met. Abs.*, this vol., p. 328.—S. G.

Recent Progress in Aluminium Alloys in America. E. H. Dix, Jr., and Zay Jeffries (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 124–125).—[In English.]—S. G.

Some Recent Developments in the Field of Wrought Aluminium Alloys. W. Stenzel (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 170–173).—[In German.]—S. G.

[Discussion on] Light Metals and Their Alloys. —— (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 213–223).—Brief reports of the discussions on 13 papers, abstracts of all of which have appeared in *Met. Abs.*, this vol.—S. G.

The Mechanical Properties of Heat-Resistant Chromium–Aluminium–Iron Alloys. W. Hessenbruch (*Z.V.d.I.*, 1937, 81, (44), 1285–1286).—Cf. *Met. Abs.*, this vol., p. 495.—D. S.

***On the Equilibrium Diagrams of the Alloys of Copper.** W. Broniewski (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 88–90).—[In French.] See *Met. Abs.*, this vol., p. 284.—S. G.

***Studies on Beryllium-Containing Copper Alloys.—I.** Kenzo Inamura and Hidekichi Ohashi (*Tetsu to Hagane* (*J. Iron Steel Ind. Japan*), 1937, 23, (11), 1085–1091).—[In Japanese.] See *Met. Abs.*, this vol., p. 602.—S. G.

***Effect of Tellurium on Mechanical Properties of Certain Copper-Base Alloys.** H. L. Burghoff and D. E. Lawson (*Met. Ind.* (*Lond.*), 1937, 51, (23), 551–555).—See *Met. Abs.*, this vol., p. 497.—S. G.

***The Equilibrium Diagram of the System Copper–Tin and the Transformations Associated with the Decomposition of the α-Solid Solution Phase.** S. T. Konobejewski and W. P. Tarassova (*Zhurnal Fizicheskoy Khimii* (*J. Phys. Chem.*), 1937, 9, (5), 681–692).—[In Russian.] See abstract from an English source, *Met. Abs.*, this vol., p. 431.—N. A.

***Determination of the Limiting Solubility of the α Phase in the Ternary System Copper–Zinc–Tin at Low Temperatures by X-Ray Analysis.** S. T. Konobejewski, W. P. Tarassova, and A. A. Stepanova (*Zhurnal Fizicheskoy Khimii* (*J. Phys. Chem.*), 1937, 9, (5), 693–703).—[In Russian.] See abstract from English source, *Met. Abs.*, this vol., p. 432.—N. A.

***Fatigue Properties of Non-Ferrous Sheet Metals.** C. H. Greenall and G. R. Gohn (*Proc. Amer. Soc. Test. Mat.*, 1937, 37, (II), 160–191; discussion, 192–194; and *Bell Telephone System Tech. Publ., Metallurgy, Monograph* B-1050, 1937, 32 pp.).—See *Met. Abs.*, this vol., p. 334.—S. G.

Technology of Magnesium Alloys. G. Siebel (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 126–129).—[In German.]—S. G.

Recent Developments in Magnesium Alloys. John L. Haughton (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 129–130).—[In English.]—S. G.

***On the Mechanical Properties and Corrosion-Resistance of Magnesium–Manganese–Zinc Alloys.** Hideo Mikashima (*Kyushu Teikoku-Daigaku Kokaku Iho* (*Tech. Rep. Kyushu Imp. Univ.*), 1937, 12, (6), 327–350).—[In Japanese.] See *Met. Abs.*, this vol., p. 331.—S. G.

The Use of Nickel in Non-Ferrous Alloy Castings. J. O. Hitchcock (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 338–368; discussion, 368–378).—See *Met. Abs.*, this vol., p. 332.—S. G.

***Some Alloys for Use at High Temperatures. IV.—The Constitution of the Alloys of [Nickel and Chromium, Nickel and Iron, and] Nickel, Chromium, and Iron.** C. H. M. Jenkins, E. H. Bucknall, C. R. Austin, and G. A. Mellor (*J. Iron Steel Inst.*, 1937, **136**, 187–220; discussion, 221–222; and (abstract) *Iron Steel Ind.*, 1937, **10**, (15), 666–670).—See *Met. Abs.*, this vol., p. 501.
—S. G.

The Solidification of Ingots. Cecil H. Desch (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 99–101; and *Sheet Metal Ind.*, 1937, **11**, (123), 609–610).—[In English.] See *Met. Abs.*, this vol., p. 286.—S. G.

Progress in the Knowledge of Slag Inclusions. Helge Löfquist (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 95–99).—[In English.] See *Met. Abs.*, this vol., p. 286.—S. G.

***Yield Strengths Corresponding to Small Percentages of Set.** G. F. Jenks (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 523–527).—See *Met. Abs.*, this vol., p. 436.—S. G.

The Effect of Vibrations on the Tensile Properties of Metals. G. Welter and A. Bukalski (*Engineering*, 1937, **144**, (3729), 4–5).—See *Met. Abs.*, this vol., p. 84.—N. B. V.

***The Reduction of Abrasion by Compound Contact Pieces or Powder.** Seizo Saito (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 152–156).—[In English.] See *Met. Abs.*, this vol., p. 335.—S. G.

III.—STRUCTURE

(Metallography; Macrography; Crystal Structure.)

(Continued from pp. 624–628.)

†Microchemical Examination of the Surface of Metallic Materials. M. Niessner (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 51–54).—[In German.] See *Met. Abs.*, this vol., p. 336.—S. G.

Progress in Metallurgical Microscopy. W. Köster (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 59–60).—[In German.]—S. G.

Progress in Microscopy. Francis F. Lucas (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 60–61).—[In English.] See *Met. Abs.*, this vol., p. 286.—S. G.

Progress in the Technique of the Determination of Equilibrium Diagrams. W. Köster (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 86–88).—[In German.] See *Met. Abs.*, this vol., p. 336.—S. G.

[Discussion on] Progress of Metallography. —— (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 200–212).—Brief reports of discussions on 25 papers; abstracts of all except two papers (of ferrous interest) have appeared in *Met. Abs.*, this vol.—S. G.

The Preparation of Specimens for Macro- and Micro-Examination. W. H. Dearden (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 56–58).—[In English.] See *Met. Abs.*, this vol., p. 287.—S. G.

Crystalline Structure and the Properties of Materials. E. Schmid (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 67–69).—[In German.] See *Met. Abs.*, this vol., p. 339.—S. G.

***On Nuclei Formation During Recrystallization. III.—The Orientation of Recrystallization Nuclei.** M. O. Kornfeld (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, **7**, (3), 450–456).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 45.
—N. A.

***On Nuclei Formation During Recrystallization. IV.—The Orientation of Recrystallization Nuclei.** M. O. Kornfeld (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, 7, (3), 457–459).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 238.
—N. A.

***On Nuclei Formation During Recrystallization. V.—Effect of Relaxation on the Velocity of Nuclei Formation During Subsequent Recrystallization.** M. O. Kornfeld and A. A. Schamarin (*Zhurnal Eksperimentalnoy i Teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1937, 7, (3), 460–462).—[In Russian.] See abstract from a German source, *Met. Abs.*, this vol., p. 238.
—N. A.

***The Microstructure of Aluminium–Magnesium Alloys.**—E. Möckel (*Metallurgia*, 1937, **16**, (96), 209–211).—Slightly abridged from *Aluminium*, 1937, **19**, 433–439; see *Met. Abs.*, this vol., p. 508.—S. G.

Molecular Roughness and Surface Structure. Hans Funk and Hans Steps (*Kolloid-Z.*, 1935, **70**, 109–119).—A review, with 95 references.—S. G.

X-Ray Interference Investigation in Metallurgy. U. Dehlinger (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 63–65).—[In German.] See *Met. Abs.*, this vol., p. 338.—S. G.

The Application of Electron Interference to the Study of Metallic Surfaces. F. Kirchner (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 74–77).—[In German.]—S. G.

†The Study of Metal Films and Surfaces by Electron Diffraction. G. I. Finch (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 77–80).—[In English.] See *Met. Abs.*, this vol., p. 288.—S. G.

***Electron Interference in the Study of the Oxidation of Crystal Surfaces.** G. Aminoff (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 80–82).—[In English.] See *Met. Abs.*, this vol., p. 288.—S. G.

Electron-Optical Observation of Metal Surfaces. W. G. Burgers (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 82–85).—[In English.] See *Met. Abs.*, this vol., p. 288.—S. G.

Quantitative Metallographic X-Ray Technique. A. J. Bradley (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 66–67).—[In English.] See *Met. Abs.*, this vol., p. 289.—S. G.

Characteristics of the Deformation and Fracture of Metals as Revealed by X-Rays. H. J. Gough (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 69–71).—[In English.] See *Met. Abs.*, this vol., p. 289.—S. G.

Precision Measurement of Lattice Constants. M. C. Neuburger (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 61–63).—[In German.] See *Met. Abs.*, this vol., p. 339.—S. G.

†The Hypothesis of Secondary Structure Applied to the Mechanical Properties of Metals. Pol Duwez (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 592–595).—[In French.] See *Met. Abs.*, this vol., p. 191.—S. G.

IV.—CORROSION

(Continued from pp. 628–637.)

***Corrosion Under the Influence of Falling Drops of Liquid [Aluminium, Elektron, Steel.]** G. Welter and S. Gońkowski (*Przemysł Chem.*, 1937, **21**, 177–184; German summary, 184).—See *Met. Abs.*, this vol., p. 513.—S. G.

***Action of Blotting Paper Soaked in Salt Solution on Alloys of Aluminium Submitted to Static Strains.** R. Irmann and W. Müller (*Métaux et Corrosion*, 1938, **13**, (152), 79–81).—Summary from *Schweiz. Arch. angew. Wiss. Tech.*, 1937, **3**, (6), 158–166; see *Met. Abs.*, this vol., p. 629.—L. E. P.

Corrosion, Oxidation, and Stability to Sulphur of Non-Ferrous Metals at High Temperatures. W. Rohn (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 42–44).—[In German.] See *Met. Abs.*, this vol., p. 342.—S. G.

Recent Progress and Applications of Methods of Investigating Gaseous Corrosion. A. Portevin, E. Prétet, and H. Jolivet (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 167–169).—[In French.]—S. G.

†**Corrosion as Influenced by Increased Temperature.** U. R. Evans (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 34–36).—[In English.] See *Met. Abs.*, this vol., p. 291.—S. G.

The Chemical Properties and Stability of Metals at High Temperatures. C. H. M. Jenkins (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 36–37; and *Chem. Age*, **1937**, **36**, (933), 437–438).—[In English.] See *Met. Abs.*, this vol., p. 292.—S. G.

Regarding the Factors Influencing Corrosion at Increased Temperature. Carl Benedicks (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 40–41).—[In English.] See *Met. Abs.*, this vol., p. 292.—S. G.

†**The Corrosion Problem and the Engineer.** F. Hudson (*Water and Water Eng.*, 1937, **39**, 563–566).—See *Met. Abs.*, this vol., p. 395.—S. G.

Experience with Non-Corrodible Materials in the Swedish Chemical Industry. E. Norlin (*Chem. Eng. Congr., World Power Conf. 1936, Advance Copy*, **1936**, (B 9), 22 pp.).—Cf. *Met. Abs.*, 1936, **3**, 205.—S. G.

V.—PROTECTION

(Continued from pp. 637–642.)

†**Report on Methods of Testing Oxide Coatings on Aluminium.** Junius D. Edwards (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 261–272).—Appendix II to Report of Committee B-7 on Light Metals and Alloys, Cast and Wrought. See *Met. Abs.*, this vol., p. 445.—S. G.

Anodic Oxidation of Aluminium and Its Industrial Applications. Akira Miyata (*Chem. Eng. Congr., World Power Conf. 1936, Advance Copy*, **1936**, (D 7), 17 pp.; and *Aluminium and Non-Ferrous Rev.*, 1936, **1**, (9), 437–440; (10), 482–483).—See also *Met. Abs.*, 1936, **3**, 159.—S. G.

Eloxal, a New Commercial Material. W. Birett (*Siemens Z.* 1936, **16**, 1–4).—See *Met. Abs.*, 1936, **3**, 680.—S. G.

***Variation in Thickness of the Tin Coating of Tinplate, and Its Effect on Porosity.** W. E. Hoare (*J. Iron Steel Inst.*, 1937, **136**, 99–120; discussion, 121–130; also *Tech. Publ. Internat. Tin Res. Develop. Council, Series A*, 1937, (59), 22 pp.; *Sheet Metal Ind.*, 1937, **11**, (127), 985–988; (128), 1087–1090; 1938, **12**, (129), 35–36; and (summaries) *Iron Steel Ind.*, 1937, **10**, (15), 662–665; and *Engineering*, 1937, **144**, (3753), 700).—See *Met. Abs.*, this vol., p. 396.—S. G.

Tentative Method of Test for Uniformity of Coating by the Preece Test (Copper Sulphate Dip) on Zinc-Coated (Galvanized) Iron or Steel Wire (A 191–36 T). —— (*Book of A.S.T.M. Tentative Standards*, **1937**, 237–239).—See *Met. Abs.*, this vol., p. 195.—S. G.

On the Determination of the Uniformity of a Zinc Coating. A. R. Matthis (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 54–56).—[In French.] See *Met. Abs.*, this vol., p. 344.—S. G.

Tentative Specifications for Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing (A 116–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 646–648; and *Book of A.S.T.M. Tentative Standards*, **1937**, 230–232).—See *Met. Abs.*, this vol., p. 397.—S. G.

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†**Fundamental Principles of Metallic Protection.** U. R. Evans (*Proc. Staffordshire Iron Steel Inst.*, 1936–1937, 52, 91–102).—See *Met. Abs.*, this vol., p. 445.—R. S. T.

Use of Chlorinated Caoutchouc for Protective Painting on Light Metals. R. Strauss (*Paint Varnish Prod. Manuf.*, 1937, 16, (5), 7–8).—See also *Met. Abs.*, this vol., p. 398. A review.—S. G.

VI.—ELECTRODEPOSITION

(Continued from pp. 642–649.)

***The Behaviour of Lead in Nickel Baths.** Max Wittum (*Mitt. Forschungsinst. Edelmetalle*, 1937, 11, (9/10), 73–77).—See *Met. Abs.*, this vol., p. 644.—D. R. S.

Discussion on [Johnson's Paper on] Bright Nickel Plating. —— (*J. Electrodepositors' Tech. Soc.*, 1937, 12, 191–192).—See *Met. Abs.*, this vol., p. 248.—S. G.

Discussion on [Finch and Williams' Paper on] the Structure of Electrodeposited Nickel. —— (*J. Electrodepositors' Tech. Soc.*, 1937, 12, 181–185).—See *Met. Abs.*, this vol., pp. 189 and 510.—S. G.

***Nickel-Cobalt Alloy Plating from Low p_H Acid Sulphate Solutions.** C. B. F. Young and Charles Egerman (*Trans. Electrochem. Soc.*, 1937, 72, 447–458; discussion, 458–460; and (abridged) *Met. Ind.* (*Lond.*), 1937, 51, (25), 605–608).—See *Met. Abs.*, this vol., p. 525.—S. G.

***The Behaviour of Alloy Anodes in Deposition of Silver-Cadmium Alloys from Cyanide Baths.** Charles L. Faust, Donald J. Henry, and Wesley G. France (*Trans. Electrochem. Soc.*, 1937, 72, 479–499; discussion, 499–500).—See *Met. Abs.*, this vol., p. 646.—S. G.

***The Electrodeposition of Tin. II.—Anode Maintenance of an Alkaline Stannate Bath.** Lawrence E. Stout and Albert H. Baum (*Trans. Electrochem. Soc.*, 1937, 72, 429–444; discussion, 444–446; and *Met. Ind.* (*Lond.*), 1938, 52, (5), 157–160; (6), 183–185).—See *Met. Abs.*, this vol., p. 525.—S. G.

VII.—ELECTROMETALLURGY AND ELECTROCHEMISTRY

(Other than Electrodeposition.)

(Continued from pp. 649–650.)

***Electrolytic Production of Beryllium-Copper Alloys.** Colin G. Fink and Tsing-Nang Shen (*Trans. Electrochem. Soc.*, 1937, 72, 317–324; discussion, 324; and *Met. Ind.* (*Lond.*), 1937, 51, (22), 533–536).—See *Met. Abs.*, this vol., p. 401.—S. G.

***The Effect of Speed of Rotation on the Electrode Potentials of Copper and Zinc.** Colin G. Fink and Henry B. Linford (*Trans. Electrochem. Soc.*, 1937, 72, 461–469; discussion, 469–472).—See *Met. Abs.*, this vol., p. 529.—S. G.

Industrial p_H Control with the Antimony Electrode. W. N. Greer (*Trans. Electrochem. Soc.*, 1937, 72, 153–164; discussion, 164–165).—See *Met. Abs.*, this vol., p. 401.—S. G.

***The Antimony Electrode in p_H Measurements.** T. R. Ball (*Trans. Electrochem. Soc.*, 1937, 72, 139–151; discussion, 151–152).—See *Met. Abs.*, this vol., p. 529.—S. G.

Electrometallurgical and Electrochemical Industries Based on Hydraulic Power in Norway in 1934. E. Svanöe (*Chem. Eng. Congr., World Power Conf. 1936, Advance Copy*, 1936, (D 11), 14 pp.).—S. G.

IX.—ANALYSIS

(Continued from pp. 651–655.)

***Systematic and Accurate Chemical Analysis of Aluminium and Its Light Alloys.** E. Azzarello, A. Accardo, and F. Abramo (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 109–111).—[In English.] See *Met. Abs.*, this vol., p. 295.—S. G.

The Analysis of a Chromium[-Plating] Solution. H. J. Glass (*C. and A. Bull.*, 1936, 1, (3), 8).—S. G.

***Sensitive Test for Germanium.** N. S. Poluektov (*Zhurnal Prikladnoĭ Khimii* (*J. Applied Chem.*), 1936, 9, (12), 2302–2304).—[In Russian, with German summary.]—S. G.

Sensitive Spot Test for Indium. A. S. Komarovsky and N. S. Poluektov (*Mikrochemie*, 1934, 16, 227–232).—S. G.

***Detection of Osmium by Spot Test.** N. A. Tananaev and A. N. Romanjak (*Zhurnal Prikladnoĭ Khimii* (*J. Applied Chem.*), 1936, 9, (12), 2324–2331).—[In Russian.] See *Met. Abs.*, this vol., p. 202.—S. G.

X.—LABORATORY APPARATUS, INSTRUMENTS, &c.

(See also "Testing" and "Temperature Measurement and Control.")

(Continued from pp. 655–656.)

The Electron Microscope in Metallographic Investigation. W. G. Burgers (*Hand. 26e Ned. Natuur.- & Geneesk. Congr.*, 1937, 124–127; and *Laboratoria N.V. Philips' Gloeilamp., Eindhoven, Separaat*, 1937, (1209)).—The matter in this paper is given in detail in *Philips Tech. Rev.*, 1936, 1, 313, 321 (*Met. Abs.*, this vol., p. 296).—S. G.

XI.—PHYSICAL AND MECHANICAL TESTING, INSPECTION, AND RADIOLOGY

(Continued from pp. 656–662.)

†The Transfer of Tests of Materials from the Laboratory to the [Actual] Works. A. Weigl (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 569–572).—[In German.] See *Met. Abs.*, this vol., p. 202.—S. G.

†The Testing of Materials and Confirmation in [Actual] Plant. R. Kühnel (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 572–575).—[In German.] See *Met. Abs.*, this vol., p. 202.—S. G.

†The Requirements of Constructional Materials Considered from the Works Point of View, and the Application of Laboratory Data. E. Lehr (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 575–578).—[In German.] See *Met. Abs.*, this vol., p. 202.—S. G.

†Laboratory Tests in Relation to the Serviceability of Steel and Steel Products. (Sir) Robert Hadfield and S. A. Main (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 578–581).—[In English.] See *Met. Abs.*, this vol., p. 202.—S. G.

The Principal Industrial Alloys of Aluminium. An Attempt at a Classification. J. Douchement (Suppt. to *Light Metals Rev.*, 1937, 4, (5), pp. 1–9; and *Aluminium and Non-Ferrous Rev.*, 1938, 3, (3), 123–126).—Translated from *Rev. Mét.*, 1937, 34, 520–524; see *Met. Abs.*, this vol., p. 656.—S. G.

The Analysis of Wear Processes as the Starting Point in the Wear-Testing of Metals. Hans Meyer (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 146–147).—[In German.] See *Met. Abs.*, this vol., p. 351.—S. G.

***Experiments on the Abrasion of Metals.** H. E. Smith (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 148–149).—[In English.] See *Met. Abs.*, this vol., p. 351.—S. G.

Testing High-Endurance Oxidation-Resistant Alloys. F. E. Bash (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 46–48).—[In English.] See *Met. Abs.*, this vol., p. 296.—S. G.

Examination of the Behaviour of Metals Under Mechanical Stress at Elevated Temperatures. Anton Pomp (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 12–15).—[In German.] See *Met. Abs.*, this vol., p. 352.—S. G.

Measuring Elastic Drift [Creep]. Robert W. Carson (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 661–670; discussion, 671–674).—See *Met. Abs.*, this vol., p. 297.—S. G.

A Comparison of the Methods Used for Interpreting Creep-Test Data. Joseph Marin (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 258–264; discussion, 265–268).—See *Met. Abs.*, this vol., p. 351.—S. G.

Interpretation and Use of Creep Results. J. J. Kanter (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 26–27).—[In English.] See *Met. Abs.*, this vol., p. 297.—S. G.

New Equipment for Creep Tests at Elevated Temperatures. P. G. McVetty (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 235–253; discussion, 254–257).—See *Met. Abs.*, this vol., p. 352.—S. G.

Tentative Method of Test for Short-Time High-Temperature Tension Tests of Metallic Materials (E 21–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 1290–1299; and *Book of A.S.T.M. Tentative Standards*, **1937**, 1534–1543).—See *Met. Abs.*, this vol., p. 407.—S. G.

Report of the [A.S.T.M.] Committee on Fatigue of Metals. H. F. Moore (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 157–158).—Progress report.—S. G.

Nomenclature for Various Ranges in Stress in Fatigue. —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 159–161; discussion, 162–163).—Appendix to Report of the Research Committee on Fatigue of Metals (preceding abstract). See *Met. Abs.*, this vol., p. 459.—S. G.

***Fatigue Properties of Metals Used in Aircraft Construction at 3450 and 10,600 Cycles.** T. T. Oberg and J. B. Johnson (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 195–203; discussion, 204–205).—See *Met. Abs.*, this vol., p. 352.—S. G.

A Fatigue Machine for Testing Metals at Elevated Temperatures. F. M. Howell and E. S. Howarth (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 206–215; discussion, 216–217).—See *Met. Abs.*, this vol., p. 352.—S. G.

Pulsator Fatigue-Testing Machine. —— (*Machinery* (*Lond.*), 1937, **49**, (1266), 482–483).—A detailed description of the Schenck model.—N. B. V.

Elimination of the Influence of Thickness in Cupping Tests on Thin Sheet Metal. —— Marchand (*Sheet Metal Ind.*, 1937, **11**, (126), 898, 903, 904).—See *Met. Abs.*, this vol., p. 659.—N. B. V.

***The Stiffness or Flexure Test.** H. L. MacBride (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 146–155; discussion, 156–159; and *Sheet Metal Ind.*, 1937, **11**, (125), 785–788).—See *Met. Abs.*, this vol., p. 297.—S. G.

***The Measurement of Deformations or Cracks in Tensile, Pressure, and Flexure Tests, by Means of Polarization-Microscopic Methods.** Adalbert Pogány (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 605–610).—[In German.] See *Met. Abs.*, this vol., p. 203.—S. G.

Endurance Bending and Tension-Compression Testing and Observations on the Influence of Temperature. G. Welter (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 29–32, 191–192).—[In German.] See *Met. Abs.*, this vol., p. 353. W. supplements (pp. 191–192) his paper (pp. 29–32) by some remarks on some temperature effects.—S. G.

***Contribution to the Study of Impact Tensile Testing of Metals.** Vicente I. Garcia (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 32–33).—[In French.] See *Met. Abs.*, this vol., p. 353.—S. G.

***†Impact Testing from a Physical Standpoint.** R. V. Southwell (*Found. Trade J.*, 1937, **57**, (1108), 375–377).—Read before the Manchester Association of Engineers; see *Met. Abs.*, this vol., p. 541.—S. G.

***The Untenability of the Concept of an Upper and Lower Yield-Point, and the Breaking Strength of Mild Steel and Other Metals.** G. Welter (*Metallurgia italiana*, 1936, **28**, (5), 219–224).—See *Met. Abs.*, 1936, **3**, 372.—D. S.

***Analysis of the Brinell Hardness Test.** Robert H. Heyer (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (II), 119–141; discussion, 142–145).—See *Met. Abs.*, this vol., p. 353.—S. G.

***A Continuous Hardness Test: Periodic Hardness Fluctuations.** Edward G. Herbert (*Engineer*, 1937, **164**, (4263), 340–341; and *Engineering*, 1937, **144**, (3741), 352–353; (3746), 495–496).—See *Met. Abs.*, this vol., p. 542.—N. B. V.

†Industrial Radiography Employing Gamma Rays. Fern. Guyot (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 589–592).—[In French.] See *Met. Abs.*, this vol., p. 203.—S. G.

Radiology in Testing. V. E. Pullin (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 600–601).—[In English.] See *Met. Abs.*, this vol., p. 203.—S. G.

XIII.—FOUNDRY PRACTICE AND APPLIANCES

(Continued from pp. 663–667.)

Trends in the Non-Ferrous Foundry. L. B. Hunt (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 322–337; discussion, 368–378; and *Engineer*, 1937, **164**, (4269), 515–516).—See *Met. Abs.*, this vol., p. 355.—S. G.

Physical Factors in the Casting of Metals. C. H. Desch (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 77–99).—See *Met. Abs.*, this vol., p. 355.—S. G.

The Flowing Power of Metals and Alloys. Wilhelm Patterson (*Rev. Fonderie moderne*, 1937, **31**, (Sept. 10/25), 241–245).—A long abstract from *Giesserei*, 1936, **23**, 405–410; see *Met. Abs.*, 1936, **3**, 413.—H. W. G. H.

Gates and Risers for Large Non-Ferrous Castings. A. Dunlop (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 620–642).—See *Met. Abs.*, this vol., p. 259.—S. G.

Remelting Aluminium in the Foundry. H. Röhrig (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 269–281; discussion, 281–282; also *Aluminium and Non-Ferrous Rev.*, 1937, **2**, (11), 381–382; (12), 419–420; and *Engineer*, 1937, **164**, (4264), 375–376).—See *Met. Abs.*, this vol., p. 408.—S. G.

Equipment for the Preparation of Granulated Aluminium in Large Quantities. Gotthard E. Lenk (*Metall u. Erz*, 1935, **32**, 5–6).—Describes the construction and operation of an American plant.—S. G.

The Bell Industries in England and America. J. R. Nichols (*Rev. Fonderie moderne*, 1935, **29**, (Jan. 25), 23–26).—The casting, moulding and pouring, and tuning of bells are described.—S. G.

New Ferrous Alloys Obtained by Use of Boride Crystals. Miles C. Smith (*Steel*, 1937, **100**, (13), 46–47).—See *Met. Abs.*, this vol., p. 410.—P. R.

The Application of Science to the Control of Foundry Sands. H. H. Shepherd (*Proc. Inst. Brit. Found.*, 1936–1937, **30**, 416–441; discussion, 441–446).—See *Met. Abs.*, 1936, **3**, 579.—S. G.

A New Method of Moulding and Sand Preparation. Mario Olivo (*Congrès internat. Fonderie, Paris*, (*Preprint*), 1937, (in French); and *Found. Trade J.*, 1937, **57**, (1097), 159–161, 166).—S. G.

Die-Casting. A. C. Street (*J. B'ham. Met. Soc.*, 1937, **17**, (4), 155–165; discussion, 165–176; and (summary) *Found. Trade J.*, 1937, **57**, (1110), 413–414).—See *Met. Abs.*, this vol., p. 667.—S. G.

Die-Casting. Martin Storch (*Mech. World*, 1937, **102**, (2640), 125–127; (2641), 149–150).—Summary of an article in *Z.V.d.I.*, 1937, **81**, (5), 119–125. (See *Met. Abs.*, this vol., p. 159).—F. J.

XV.—FURNACES AND FUELS

(Continued from pp. 667–669.)

Fuel Economy in Melting and Reheating Furnaces. —— (*Iron Steel Ind.*, 1937, **10**, (14), 613–615).—Discussion of a paper by Sarjant. See *Met. Abs.*, this vol., p. 411.—N. B. V.

The Melting of Valuable Heavy Metal Alloys in Gas-Fired Rotary Furnaces Without a Crucible. Karl Schmidt G.m.b.H. (*Gas* (*Düsseldorf*), 1937, **9**, (11), 284).—Some corrections to H. Pontzen's paper (see *Met. Abs.*, this vol., p. 549).—D. S.

Automatic Control of Electric Furnaces. Maurice Déribéré (*Technique moderne*, 1936, **28**, (13), 467–471).—Completion of article already abstracted. See *Met. Abs.*, this vol., p. 62.—P. R.

XVI.—REFRACTORIES AND FURNACE MATERIALS

(Continued from pp. 669–670.)

Comments on the Present Status of the Testing of Refractory Materials. S. M. Phelps (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 391–394; also *Refract. J.*, 1937, **13**, (6), 385, 387; and (summary) *Found. Trade J.*, 1937, **56**, (1081), 370).—[In English.] See *Met. Abs.*, this vol., p. 205.—S. G.

Tentative Methods of Chemical Analysis of Refractory Materials (C 18–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (1), 760–784; and *Book of A.S.T.M. Tentative Standards*, **1937**, 534–558).—See *Met. Abs.*, this vol., p. 412.—S. G.

Chemical Analysis of Refractory Materials. E. Azzarello and F. Abramo (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 390–391).—[In English.] Cf. *Met. Abs.*, this vol., p. 205.—S. G.

XVII.—HEAT-TREATMENT

(Continued from pp. 670–672.)

Controlled Atmospheres for Copper. W. A. Darrah (*Steel*, 1937, **101**, (4), 36–42).—See *Met. Abs.*, this vol., p. 302.—P. R.

XVIII.—WORKING

(Continued from pp. 672–682.)

Mechanical Developments of Modern Cold-Rolled Strip Mills. John L. Young (*Iron Steel Eng.*, 1937, **14**, (7), 19–26).—Read before the Association of Iron and Steel Engineers; see *Met. Abs.*, this vol., p. 554.—N. B. V.

Rolls Used in Sheet Galvanizing. J. A. Succop (*Steel*, 1937, **101**, (10), 66–69, 82).—See *Met. Abs.*, this vol., p. 292.—P. R.

Production of Silver Flatware Involves Exacting Procedure. Fred B. Jacobs (*Steel*, 1937, **101**, (12), 50–54, 149).—See *Met. Abs.*, this vol., p. 555.—P. R.

[Discussion on] Workability and Wear. —— (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], 1937, 224–241).—Brief reports of the discussions on

papers on this subject; abstracts of those papers of non-ferrous or general interest have appeared in *Met. Abs.*, this vol.—S. G.

Cutting Properties of Metals. O. W. Boston (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 141–142).—[In English.] See *Met. Abs.*, this vol., p. 359.—S. G.

Some New Results Regarding the Cutting of Metals. Ragnar Woxén (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 139–140).—[In English.] See *Met. Abs.*, this vol., p. 359.—S. G.

***Internal Stresses in Machined Surfaces.** E. K. Henriksen (*Internat. Assoc. Test. Mat. London Congr.* [*Proc.*], **1937**, 173–176).—[In English.] See *Met. Abs.*, this vol., p. 359.—S. G.

XIX.—CLEANING AND FINISHING

(Continued from pp. 682–684.)

Metal Cleaning.—II. F. E. P. Griggs (*Canad. Chem. and Met.*, 1936, **20**, (10), 316, 318).—See also *Met. Abs.*, 1936, **3**, 592. G. deals with the removal of oxides and salts of the base metal. Methods of cleaning with sodium cyanide solution and sulphuric and hydrochloric acids are described, and the uses of pickling inhibitors and accelerators are discussed.—N. B. V.

Cleaning and Finishing Tanks Heated by Simple, Economical Gas Method. J. B. Nealey (*Steel*, 1937, **100**, (8), 60, 62, 73).—See *Met. Abs.*, this vol., p. 263.—P. R.

Essentials of Good Pickling Practice.—II. P. R. Russell (*Metal Cleaning and Finishing*, 1937, **9**, (3), 197–200, 214).—See also *Met. Abs.*, this vol., p. 263.—S. G.

Solvent Degreasing. W. W. Davidson (*Trans. Electrochem. Soc.*, 1937, **72**, 413–424; discussion, 424–427).—See *Met. Abs.*, this vol., p. 555.—S. G.

Solvent Degreasing. M. Marcan (*Platers' Guide*, 1935, **31**, (Feb.), 23–27).—See also *Met. Abs.*, 1936, **3**, 592.—S. G.

Directions for Colouring Aluminium Medals. K. Vollrath and G. Lahr (*Oberflächentech.*, 1935, **12**, 30).—See *Met. Abs.*, 1935, **2**, 32.—S. G.

Abrasives for Metal Polishing.—II. Cyril S. Kimball (*Metal Cleaning and Finishing*, 1937, **9**, (3), 233–234, 237).—See also *Met. Abs.*, this vol., p. 264.—S. G.

XX.—JOINING

(Continued from pp. 684–692.)

Spot- and Seam-Welding of Aluminium Alloy Sheets. D. I. Bohn (*Sheet Metal Ind.*, 1937, **11**, (126), 936, 938).—See *Met. Abs.*, this vol., p. 559.—N. B. V.

Aluminium Chairs. Owen C. Jones (*Weld. J.* (*J. Amer. Weld. Soc.*), 1937, **16**, (6), 32–33; also *Modern Eng.*, 1937, **11**, (9), 516; and *Aluminium and Non-Ferrous Rev.*, 1937, **2**, (11), 393).—See abstract from another source, *Met. Abs.*, this vol., p. 360.—H. W. G. H.

Electric Arc-Welding of Monel Metal Structures. James F. Maguire (*Sheet Metal Ind.*, 1937, **11**, (124), 741–742).—See *Met. Abs.*, this vol., p. 689.—N. B. V.

Non-Ferrous Welding—Some Problems. H. W. G. Hignett (*Met. Ind.* (*Lond.*), 1937, **50**, (4), 129–136).—See *Met. Abs.*, this vol., p. 209.—J. E. N.

Welding Rectifier and Other New Machines for Arc Welding. R. Hofmann (*A.E.G. Mitt.*, 1937, (3), 115–117).—See *Met. Abs.*, this vol., p. 117.—N. B. V.

Spot-Welding Non-Ferrous Group Possible by Time Control. H. Thomasson (*Canad. Mach.*, 1937, **48**, (5), 50–51).—See *Met. Abs.*, this vol., p. 690.—N. B. V.

[Discussion on] the Resistance Welding Circuit. C. L. Pfeiffer (*Elect. Eng.*, 1937, **56**, (7), 864–868).—See *Met. Abs.*, this vol., p. 691.—N. B. V.

XXI.—INDUSTRIAL USES AND APPLICATIONS

(Continued from pp. 692–699.)

Tentative Specifications for Aluminium-Base Alloys in Ingot Form for Sand-Castings (B 58–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 668–670; and *Book of A.S.T.M. Tentative Standards*, **1937**, 290–292).—See *Met. Abs.*, this vol., p. 418.—S. G.

Tentative Specifications for Aluminium-Base Alloy Die-Castings (B 85–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 705–707; and *Book of A.S.T.M. Tentative Standards*, **1937**, 416–418).—See *Met. Abs.*, this vol., p. 418.—S. G.

Tentative Specifications for Aluminium-Base Alloys in Ingot Form for Permanent-Mould Castings (B 112–37 T). —— (*Proc. Amer. Soc. Test. Mat.*, 1937, **37**, (I), 671–673; and *Book of A.S.T.M. Tentative Standards*, **1937**, 293–295).—See *Met. Abs.*, this vol., p. 418.—S. G.

Light Metal Construction for Gliders. L. Roth (*Z.V.d.I.*, 1937, **81**, (52), 1498).—Cf. *Met. Abs.*, this vol., p. 695.—D. S.

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A New Universal Bearing Material [Carobronze]. —— (*Marine Eng.*, 1937, **60**, (721), 286–288).—A lengthy, illustrated abstract from *Schip en Werf*, **1937**, May; see abstract from another source, *Met. Abs.*, this vol., p. 284.—N. B. V.

Protective Metal Coatings by the Wire Spraying Process. H. J. Williams. (*J. Inst. Production Eng.*, 1937, **16**, (5), 251–266).—Continuation of review already abstracted. See *Met. Abs.*, this vol., p. 215.—J. C. C.