BIBLIOGRAPHY

Some abbreviations which are not standard or self-explanatory:

HB for: Handbook of Mathematical Logic.
J. Barwise (editor), NHPC, Amsterdam, 1977.

IPT for: Intuitionism and Proof Theory. Proceedings of the summer conference at Buffalo, N.Y., 1968.
A. Kino, J. Myhill, R.E. Vesley (editors)
Amsterdam-London, 1970.

LMPS for: Logic, Methodology and Philosophy of Science, III.
B. van Rootselaar, J.F. Staal (editors)
Amsterdam, 1968.

LNM for: Lecture Notes in Mathematics.

SR for: Stanford Report on the Foundations of Analysis.
(Mimeographed) Stanford, 1963.

JSL for: Journal of Symbolic Logic.

NHPC for: North-Holland Publishing Company.

R. ACKER
1980 Zur Beweistheorie von ID_1.
Diplomarbeit, Universität München.

P. ACZEL
1977 An introduction to inductive definitions.
in: HB, pp. 739-782.

J.S. ADDISON and S.C. KLEENE
1957 A note on function quantification.
Proc. Am. Math. Soc. 8, pp. 1002-1006.

K.R. APT and W. MAREK
1974 Second order arithmetic and related topics.
Ann. Math. Logic 6, pp. 177-229.

J. BARWISE
1975 Admissible sets and structures.
Springer-Verlag, Berlin, Heidelberg, New York.

J. BARWISE and J. SCHLIPF
1975 On recursively saturated models of arithmetic.
in: Model Theory and Algebra, LNM 498, pp. 42-55.

M. BEESON
1980 Extensionality and choice in constructive mathematics.
Pacific J. of Mathematics 88, pp. 1-28,

N.V. BELYAKIN
1969 A variation of Richter's construction of ordinals.
Translation of Algebra i Logika 8, pp. 86-96.

P. BERNAYS
1976 Abhandlungen zur Philosophie der Mathematik.
Wiss. Buchgesellschaft, Darmstadt.

E. BISHOP
1967 Foundations of constructive analysis.
McGraw-Hill, New York.

E. BISHOP and H. CHENG
1972 Constructive measure theory.
Memoirs American Mathematical Society 116.

J. BRIDGE
1975 A simplification of the Bachmann method for generating large countable ordinals.
JSL 40, pp. 171-185.

L.E.J. BROUWER
1926 Zur Begründung der intuitionistische Mathematik III.
Mathematische Annalen 96, pp.451-488.

1927 Über Definitionsbereiche von Funktionen.
Math. Annalen 97, pp. 60-75 (translated in v. Heijenoort (ed.), From Frege to Gödel, pp. 446-463).

W. BUCHHOLZ
1975 Normalfunktionen und konstruktive Systeme von Ordinalzahlen.
in: Proof Theory Symposion, Kiel 1974, LNM 500, pp. 4-25.

1976 Über Teilsysteme von $\bar{\theta}(\{g\})$.
Archiv für Math. Logik und Grundlagenforschung 18, pp. 85-98.

1977 Eine Erweiterung der Schnitteliminationsmethode.
Habilitationsschrift, Universität München.

1977A Some proof theoretical results on the theories ID_ν^c, $ID_\nu^i(\mathrm{mon})$, ID_ν^i. (Preliminary version) Mimeographed.

W. BUCHHOLZ and W. POHLERS
1978 Provable wellorderings of formal theories for transfinitely iterated inductive definitions.
JSL 43, pp. 118-125.

W. BUCHHOLZ and K. SCHÜTTE
1976 Die Beziehungen zwischen den Ordinalzahlsystemen Σ und $\bar{\theta}(\omega)$.
Archiv für mathematische Logik und Grundlagenforschung 17, pp. 179-190.

1980 Syntaktische Abgrenzung von formalen Systemen der Π_1^1-Analysis und Δ_2^1-Analysis.
Sitzungsberichte der Bayerischen Akademie der Wissenschaften, Math. -Nat. Klasse.

A. CHURCH and S.C. KLEENE
1936 Formal definitions in the theory of ordinal numbers.
Fund. Math. 28, pp. 11-21.

R. DEDEKIND
1932 Gesammelte mathematische Werke, Bd. III.
Braunschweig.

S. FEFERMAN
1964 Systems of predicative analysis.
JSL 29, pp. 1-30.

1968 Lectures on proof theory.
in: Proceedings of the Summer School in Logic, Leeds 1967,
M.H. Loeb (ed.) LNM, v. 70, pp. 1-108.

1968A Ordinals associated with theories for one inductively defined set. (preliminary version) Mimeographed.

1970 Formal theories for transfinite iterations of generalized inductive definitions and some subsystems of analysis.
IPT, pp. 303-325.

1971 Ordinals and functionals in proof theory.
Proc. Int. Cong. Math. Nice 1970, Paris, pp. 229-233.

1975 A language and axioms for explicit mathematics.
LNM, v. 450, pp. 87-139.

1976 Conservation theorems for some forms of the axiom of choice over classical systems with restricted induction.
Mimeographed.

1977 Theories of finite type related to mathematical practice.
in: HB, pp. 913-971.

1978 A more perspicuous formal system for predicativity.
in: Konstruktionen versus Positionen I, edited by K. Lorenz.
Walter de Gruyter, Berlin, pp. 68-93.

1979 Constructive theories of functions and classes.
in: Logic Colloquium '78, edited by M. Boffa, D. van Dalen, K. McAloon.
NHPC, Amsterdam, pp. 159-224.

S. FEFERMAN and G. JÄGER
Choice principles, the bar rule and autonomously iterated comprehension schemes in analysis. (to appear)

S. FEFERMAN and A. LEVY
1963 Independence results in set theory by Cohen's method II.
Notices AMS 10, p. 593.

U. FELGNER
1971 Comparison of the axioms of local and universal choice.
Fundamental Mathematicae 71, pp. 43-62.

A.A. FRAENKEL, Y. BAR-HILLEL and A. LEVY
1973 Foundations of set-theory (2nd revised edition).
NHPC. Amsterdam.

H. FRIEDMAN
1970 Iterated inductive definitions and Σ^1_2-AC.
IPT, pp. 435-442.

1973 Some applications of Kleene's methods for intuitionistic systems.
LNM 337, pp. 113-170.

H. FRIEDMAN(cont.)
1976 Systems of second order arithmetic I, II .
(Abstracts)
JSL 41, pp. 557-559.

1977 Set theoretic foundations for constructive analysis.
Ann. of Math. 105, pp. 1-28.

1978 Classically and intuitionistically provably recursive functions.
in: Higher Set Theory, Proceedings, Oberwolfach, 1977,
G.H. Müller and D.S. Scott (editors).
LNM 669, pp. 21-27.

R. O. GANDY
1974 Inductive Definitions.
in: Generalized Recursion Theory, J.E. Fenstad
and P.G. Hinman (editors).
Amsterdam, 1974, pp. 265-299.

G. GENTZEN
1934/5 Untersuchungen über das Logische Schliessen I, II.
Math. Zeitschrift, 39, pp. 176-210; 39, pp. 405-431.

1943 Beweisbarkeit und Unbeweisbarkeit von Anfangsfällen der
transfiniten Induktion in der reinen Zahlentheorie.
Math. Annalen 119, pp. 140-161.

1969 On the relation between intuitionist and classical arithmetic.
in: The collected papers of Gerhard Gentzen, Szabo (ed.)
NHPC, Amsterdam.

H. GERBER
1970 Brouwer's bar theorem and a system of ordinal notations.
IPT, pp. 327-338.

J.-Y. GIRARD
A survey of Π^1_2 - logic.
in: Proc. 6th Congress of Logic, Methodology and Philosophy
of Science, Hannover 1979. (to appear)
NHPC, Amsterdam

K. GÖDEL
1932-33 Zur intuitionistischen Arithmetik und Zahlentheorie. Ergebnisse eines
math. Koll., Heft 4 (for 1931-32, published 1933), pp. 34-38.

1958 Über eine bisher noch nicht benützte Erweiterung des finiten Stand-
punktes.
Dialectica 12, pp. 280-287.

1958A Translation of [Gödel, 1958] with additional notes.
Mimeographed.

A. GRZEGORCZYK
1955 Elementarily definable analysis.
Fundamenta Mathematicae 41, pp. 311-338.

D. HILBERT
1900 Über den Zahlbegriff.
Jahresbericht der Deutschen Mathematiker-Vereinigung, 8,
pp. 180-194.

D. HILBERT and P. BERNAYS
1970 Grundlagen der Mathematik II. (Zweite Auflage)
Berlin, Heidelberg, New York.

P. G. HINMAN
1978 Recursion-theoretic hierarchies.
Springer-Verlag, Berlin, Heidelberg, New York.

W. A. HOWARD
1963 The axiom of choice $(\Sigma^1_1\text{-AC}_{01})$, bar induction and bar recursion.
Section II in SR.

1972 A system of abstract constructive ordinals.
JSL 37, pp. 355-374.

D. ISLES
1970 Regular ordinals and normal forms.
IPT, pp. 339-361.

G. JÄGER
1979 Die konstruktible Hierarchie als Hilfsmittel zur beweistheoretischen Untersuchung von Teilsystemen der Analysis.
Dissertation, Universität München.

A wellordering proof for Feferman's theory T_o.
To appear

G. JÄGER and W. POHLERS
Admissible Proof Theory.
To appear.

A. KINO
1968 On provably recursive functions and ordinal recursive functions.
Journal Math. Soc. Japan 20, pp. 456-476.

S.C. KLEENE
1938 On notation for ordinal numbers.
JSL 3, pp. 150-155.

1955 On the forms of predicates in the theory of constructive ordinals (second paper).
Am. Jour. Math. 77, pp. 405-428.

1959 Quantification of number-theoretic functions.
Comp. Math. 14, pp. 23-41.

1969 Formalized recursive functionals and formalized realizability.
Memoirs of the American Math. Society, No. 89.

1971 Introduction to Metamathematics.
Groningen, Amsterdam, London, New York.

M. KONDO
1958 Sur les ensembles nommables et le fondement de l'analyse mathématique, I.
Jap. Jour. Math. 28, pp. 1-116.

G. KREISEL
1952 On the interpretation of non-finitist proofs II.
JSL 17, pp. 43-58.

G. KREISEL (cont.)
1959 Proof by transfinite induction and definition by transfinite recursion. (Abstract)
JSL 24, pp. 322-3.

1959A Analysis of the Cantor-Bendixson theorem by means of the analytic hierarchy.
Bulletin de l'Académie Polonaise des Sciences, vol. 7, pp. 621-626.

1959B Interpretation of analysis by means of constructive functionals of finite type.
in: Constructivity in mathematics, pp.101-128.
NHPC, Amsterdam.

1960 La Prédicativité.
Bull. Soc. math. France, 88, pp. 371-391.

1960A Ordinals of ramified analysis. (Abstract)
JSL 25, pp. 390-391.

1963 Generalized inductive definitions.
Section III in SR.

1963A The subformula property and reflection principles. (Abstract)
JSL 28, pp. 305-306.

1963B Reflection principle for Heyting's arithmetic. (Abstract)
JSL 28, pp. 306-307.

1965 Mathematical Logic.
in: Lectures on Modern Mathematics, T.L. Saaty (ed.), John Wiley and Sons, Inc., pp. 95-195.

1968 A survey of proof theory.
JSL 33, pp. 321-388.

1971 A survey of proof theory II.
Proc. Second Scandinavian Logic Symposium, J.E. Fenstad (editor). Amsterdam-London, pp. 109-170.

G. KREISEL and A. LEVY
1968 Reflection principles and their use for establishing the complexity of axiomatic systems.
Zeitsch. f. math. Logik und Grundlagen der Mathematik, 14, pp. 97-142.

G. KREISEL and A.S. TROELSTRA
1970 Formal systems for some branches of intuitionistic analysis.
Annals Math. Logic 1, pp. 229-387.

G. KREISEL, J. SHOENFIELD and H. WANG
1959 Number theoretic concepts and recursive well-orderings.
Archiv für Math. Logik und Grundlagenforschung 5, pp. 42-64.

P. LORENZEN
1951 Algebraische und logistische Untersuchungen über freie Verbände.
JSL 16, pp. 81-106.

1958 Logical reflection and formalism.
JSL 23, pp. 241-249.

P. LORENZEN (cont.)
1961 Ein dialogisches Konstruktivitätskriterium.
in: Infinitistic Methods (Proc. Warsaw Symp.)
Pergamon Press, Oxford, pp. 193-200.

1965 Differential und Integral.
Akademische Verlagsgesellschaft, Frankfurt am Main.

1969 Einführung in die operative Logik und Mathematik.
(Zweite Auflage)
Springer-Verlag, Berlin, Heidelberg, New York.

P. LORENZEN and J. MYHILL
1959 Constructive definitions of certain analytic sets of natural numbers.
JSL 24, pp. 37-49.

P. MARTIN-LOEF
1971 Hauptsatz for the intuitionistic theory of iterated inductive definitions.
in: Proc. Second Scandinavian Logic Symposium, J.E. Fenstad (editor).
Amsterdam-London, pp. 179-216.

1972 Infinite terms and a system of natural deduction.
Compositio Mathematica 24, pp. 93-103.

Y.N. MOSCHOVAKIS
1974 Elementary induction on abstract structures.
NHPC, Amsterdam.

1974A On non-monotone inductive definability.
Fund. Math. 82, pp. 39-83.

H. PFEIFFER
1964 Ausgezeichnete Folgen für gewisse Abschnitte der zweiten und weiteren Zahlklassen.
Dissertation, Technische Hochschule Hannover.

1970 Ein Bezeichnungssystem für Ordinalzahlen.
Archiv für Math. Logik und Grundlagenforschung 13, pp. 74-90.

W. POHLERS
1975 An upper bound for the provability of transfinite induction in systems with N-times iterated inductive definitions.
Lecture Notes in Mathematics, v. 500, pp. 271-289.

1977 Beweistheorie der iterierten induktiven Definitionen.
Habilitationsschrift, München.

1978 Ordinals connected with formal theories for transfinitely iterated inductive definitions.
JSL 43, pp. 161-182.

Admissibility in Proof Theory.
in: Proc. 6th Congress of Logic, Methodology and Philosophy of Science, Hannover 1979. (to appear)

W. POHLERS (cont.)
Cut-elimination for impredicative infinitary systems.
Part I. Ordinal analysis for ID_1 (1978)
Part II. Ordinal analysis for iterated inductive definitions (1979)
To appear in: Archiv für mathematische Logik und Grundlagenforschung.

E. L. POST
1943 Formal reductions of the general combinatorial decision problem.
Am. Jour. Math., 65, pp. 197-215.

D. PRAWITZ
1965 Natural Deduction.
Stockholm.

1971 Ideas and results in proof theory.
in: Proc. Second Scandinavian Logic Symposium, J.E. Fenstad (editor).
Amsterdam, pp. 235-307.

F. RICHMAN
1973 The constructive theory of countable Abelian p-groups.
Pacific J. Mathematics 45, pp. 621-637.

W. RICHTER
1965 Extensions of the constructive ordinals.
JSL 30, pp. 193-211.

1975 Review of [BELYAKIN].
JSL 40, p. 626.

H. ROGERS
1967 Theory of recursive functions and effective computability.
McGraw-Hill, New York.

U. SCHMERL
1979 A fine structure generated by reflection formulas over primitive recursive arithmetic.
in: Logic Colloquium 78, M. Boffa, D. van Dalen, K. McAloon (eds.)
NHPC, Amsterdam, pp. 335-350.

K. SCHÜTTE
1951 Beweistheoretische Erfassung der unendlichen Induktion in der reinen Zahlentheorie.
Math. Annalen 122, pp. 369 - 389.

1952 Beweistheoretische Untersuchung der versweigten Analysis.
Math. Annalen 124, pp. 123-147.

1960 Beweistheorie.
Springer-Verlag, Berlin.

1962 Der Interpolationssatz der intuitionistischen Prädikatenlogik.
Math. Annalen 148, pp. 192-200.

1965 Eine Grenze für die Beweisbarkeit der transfiniten Induktion in der verzweigten Typenlogik.
Archiv für Math. Logik und Grundlagenforschung 7, pp. 45-60.

K. SCHÜTTE (cont.)
1965B Predicative well-orderings.
in: Formal systems and recursive functions, Crossley and Dummett (eds).
NHPC, Amsterdam, pp. 176-184.

1969 Ein konstruktives System von Ordinalzahlen.
Archiv für Mathematische Logik und Grundlagenforschung 11, pp. 126-137; 12, pp. 3-11.

1977 Proof Theory.
Springer-Verlag, Berlin.

H. SCHWICHTENBERG
1977 Proof theory: some applications of cut-elimination.
HB, pp. 867-895.

D. SCOTT
1970 Constructive validity.
in: Symposium on Automatic Demonstration, LNM 125, pp. 237-275.

J. R. SHOENFIELD
1954 A relative consistency proof.
JSL 19, pp. 21-28.

W. SIEG
1977 Trees in metamathematics (Theories of inductive definitions and subsystems of analysis).
Ph.D. Thesis, Stanford.

1978 Relations between classical and intuitionistic theories of iterated inductive definitions. (Abstract)
JSL 43, p. 619.

1979 The proof-theoretic strength of some formal systems for constructive mathematics.
(Abstract)
JSL 44, p. 480.

1981 Conservation theorems for subsystems of analysis with restricted induction.
(Abstract)
JSL 46, pp. 194-195.

T. SKOLEM
1937 Ueber die Zurückführbarkeit einiger durch Rekursionen definierter Relationen auf "Arithmetische".
Acta Szeged 8, pp. 73-88.

C. SMORYNSKI
1977 The incompleteness theorems.
HB, pp. 821-865.

C. SPECTOR
1961 Inductively defined sets of numbers.
in: Infinitistic Methods (Proc. Warsaw Symp.)
Pergamon Press, Oxford, pp. 97-102.

1962 Provably recursive functions of analysis.
in: Recursive function theory,
AMS Proc. Symposia Pure Math 5, pp.1-27.

W. W. TAIT
1961 Nested recursion.
Math. Annalen, 143, pp. 236-250.

1965 Functionals defined by transfinite recursion.
JSL 30, pp. 155-174.

1965A Infinitely long terms of transfinite type.
in: Formal systems and recursive functions.
Proc. 8th Logic Colloquium, Oxford, 63,
Crossley and Dummett (editors).
Amsterdam 1965, pp. 176-185.

1968 Normal derivability in classical logic.
in: The Syntax and Semantics of Infinitary Languages,
J. Barwise (editor), LNM 72, pp. 204-236.

1968A Constructive reasoning.
LMPS, pp. 185-199.

1970 Applications of the cut elimination theorem to some
subsystems of classical analysis.
IPT, pp. 475-488.

G. TAKEUTI
1967 Consistency proofs of subsystems of classical analysis.
Ann. Math. 86, pp. 299-348.

1975 Proof Theory.
NHPC, Amsterdam.

1978 Two applications of Logic to Mathematics.
Publications of the Mathematical Society of Japan.
Iwanami Shoten, Publishers, and Princeton University Press.

G. TAKEUTI and M. YASUGI
1973 The ordinals of the systems of second order arithmetic with
the provably Δ^1_2 - comprehension axiom and with the Δ^1_2 - compre-
hension axiom respectively.
Jap. Jour. Math., 41, pp. 1-67.

A. S. TROELSTRA
1973 Metamathematical investigations of intuitionistic
arithmetic and analysis. (A.S. Troelstra, editor)
LNM 344.

1977 Aspects of constructive mathematics.
HB, pp. 973-1052.

J. VAN HEIJENOORT (editor)
1967 From Frege to Gödel –
A source book in mathematical logic, 1879-1931.
Harvard University Press, Cambridge, Mass.

H. WANG
1953 Certain predicates defined by induction schemata.
JSL 18, pp. 49-59.

H. WANG (cont.)
1963 A Survey of Mathematical Logic.
NHPC, Amsterdam.

H. WEYL
1918 Das Kontinuum.
Leipzig.

J.I. ZUCKER
1973 Iterated inductive definitions, trees and ordinals.
in: [TROELSTRA, 1973, pp. 392-453].

INDICES FOR THE INDIVIDUAL CHAPTERS. We decided to have separate indices for the individual chapters, as those may be more useful for the reader than a longish combined index. After all, the chapters II through VI are relatively independent and make use of some special notation. The basic framework is given in Chapter I; so the index for that chapter should be consulted for notations and definitions not listed in the other indices.

INDEX FOR CHAPTER I.

General notation and abbreviations.

Names of special formulas and axioms.

Names of theories.

INDEX FOR CHAPTER II.

Notation and abbreviations.

Names for special formulas and axioms.

Names of theories.

Definitions.

INDEX FOR CHAPTER III.

Notation and abbreviations.

Names of special formulas, axioms and theories.

Definitions.

INDEX FOR CHAPTERS IV and V.

Notation and abbreviations.

INDEX FOR CHAPTER VI.

Notations and abbreviations.