Subject-Author-Gene Cumulative Index for PNL Volumes 15 (1983) through 19 (1987) Charlotte Pratt - Indexer

Amino acids

Screening for sulfur containing amino acids in seeds 17:36

Biographies and obituaries

Fedotov, V. S. 15:2 Gottschalk, W. 17:3 Gustafson, A. G. 17:95 Lock, R. H. 18:2 Tschermak-Seysenegg, E. von 19:3 Weibull, W. 16:iv

Books and journals

"The Pea", R. Kh. Makasheva 18:1

"Genetics and Breeding of Peas", V. V. Khvosttova, ed. 18:1

PGRO Pea Growing Handbook. 1984 ed. 16:back cover

Branching

Branching: effect of flowering and length genes 18:12

Breeding

Breeding early-maturing protein lines 19:12

Dry pea production in Canada 19:97

Inheritance of growth rate and node development in a diallel cross 16:8

Pea research in Colombia 19:96

Breeding lines

Cultivar database 17:90 Geneva collection of genetic stocks 17:89 Stocks requested 17:88

Carbohydrates

PEPc in developing wrinkled and round seeds 16:64

Chlorophyll

Antibiotics-mutagenesis tests: new gene, lws 17:50
Chlorophyll changes during ontogeny 17:65
Chlorophyll mutant, low penetrance and varying expressivity 19:28
Chlorophyll mutants: absorption spectra 19:61
Chromosomes 1 and 5, supplemental linkage data for 16:49
Costata gene, lum-2, on chromosome 3 19:70
gp (yellow) and Gp (green) fruits, optical properties of 19:46
Linkage of two chlorophyll mutations 16:10

Streptomycin blocks chlorophyll synthesis 15:36 Thylakoid membrane polypeptides from wild type and chlorophyll deficient mutants 17:66

Chromosome map

Adh-1 and Gal-3 on chromosome 3, relative position of 17:75

"Aero": linkage on chromosome 1

Chromosome maps revised

Chromosome 3 and En, linkage relationships among markers 17:57

Chromosome 5, revised linkage map of 17:14

Chromosomes 1 and 5, supplemental linkage data for 16:49

Chromosomes 1 and 7: supplemental linkage data 19:35

Curl, Ore, and "Det": linkage 18:45

Determinate growth habit (det): isolation, symbolization, and linkage 19:31

dne, b, st on chromosome 3, linkage of 19:45

er: location 18:39

Isozymic locus, Aat-p, data for mapping of

Linkage determinations for isozymic loci 15:54

Linkage groups II and IV, located by BSG-staining Linkage of two chlorophyll mutal ions 16:10

Linkage on chromosomes 3 and 5 15:47

Linkage relations of genes af-i on chromosome 1 and curl-tl on

19:77 chromosome 7

Male sterility, genetics and cytology of 16:60

Necrosis (nec): new gene on chromosome 5 17:68

New gene, Mdh, for malate dehydrogenase

New gene, det, and its linkages on chromosome 1

Orange cotyledons, Orc, and orange leaves, orl, new genes on

chromosome 1 19:66

Production of 2n pollen and Linkage relal ions of α L6:59

Rb may be located on chromosome 3 19:40

Resistance to Fusarium wilt, genes for 19:41

Resistance to PEMV, Adh-1 marker for 19:82

Second gene arthritic (art.-2) on chromosome 5 17:70

Sinuate leaf, sil, linked with Wsp 19:33

Supplementary linkage data 18:70

Tendrilled acacia, tac: an allele at the Uni lotus

tac and apu, linkage relations 16:46

Td, is it located on chromosome 3 or 4' 19:

Wsp and isozyme locus Alat-p, linkage of 19:80

Chromosome structure

Chromosome maps revised 19:20

Chromosome 7 in interphase 18:(>1

Chromosome structure of L-108, Nilsson's N 11

Hammarlund's K-line: new interpretation 18:34

Interchange lines, C-banding in 18:64

Linkage groups II and IV, located by BSG-staining 17:15

Polyploids, artificial 18:32

Seed proteins of chromosome mutants 16:68

Sister chromatid exchange 19:86

Tetraploids, cytology of 19:7

Translocations identified by C-banding technique 17:81

Cross-overs

Chromosome maps revised 19:20

Chromosomes 1 and 5, supplemental linkage data for 16:49

Costata gene, lum-2, on chromosome 3 19:70

Hammarlund's K-line: new interpretation 18:34

Interchange lines, C-banding in 18:64

Isozymic locus, Aat-p, data for mapping of 19:76

Linkage on chromosomes 3 and 5 15:47

Orange cotyledons, Ore, and orange leaves, orl, new genes on

chromosome 1 19:66

Second gene arthritic (art-2) on chromosome 5 17:70

Sister chromatid exchange 19:86

Disease resistance

Ascochyta pisi race "C", inheritance of resistance to 16:6
Ascochyta stem blight, enation mosaic, and red clover vein mosaic, resistance to 16:4

Chromosome 3 and En, linkage relationships among markers 17:57

Four new varieties 15:62

Gene er: location elusive 18:39

Germplasm and PSbMV in northern India, 1987 19:55

HFP 4, a high yielding leafless strain 18:21

Pea enation mosaic virus, en 15:3

Pea research in Colombia 19:96

Pea seedborne mosaic virus: an hypothesis of geographic origin 18:22

Resistance to Fusarium wilt, genes for 19:41

Resistance to PEMV, Adh-1 marker for 19:82

'Sublima' 15:62

Virus resistance genes 19:48

Diseases and disorders

Chromosomes 1 and 5, supplemental linkage data for 16:49
Germplasm and PSbMV in northern India, 1987 19:55
Pea research in Colombia 19:96
Seedborne mosaic virus: geographic origin of, an hypothesis 18:22
Three-point linkage analysis involving Am-1-Af-i 15:43
Virus resistance genes 19:48

DNA

DNA binding proteins, rapid method to detect 17:24
Histones and HMG-like proteins correlated with equivalent fractions of calf thymus 17:25

Dominance-recessiveness

Bifurcated mutant 157 (Gottschalk), bif-2 17:84

Gene pal and seed coat color 16:43

Gibberellin and heterosis 18:59 (Errata 19:101)

Isogenic lines, competitive ability of 16:35

Isozymic locus, Aat-p, data for mapping of 19:76

Leucine aminopeptidase (LAP-2) variability 17:86

lol, new gene producing lobate leaflets 19:78

New gene for dark purple testa, put 18:5

New gene (Idh) coding isocitrate dehydrogenase linked with D on

chromosome 1 16:75 Orange cotyledons 15:9 Seed proteins of chromosome mutants Segregation of mutant genes 16:13 Semidominant mutations 19:64 Td, is it located on chromosome 3 or 4? 19:38 Tendrilled acacia (tac): an allele at the Uni locus 18:49 Wsp and isozyme locus Alat-p, linkage of 19:80

Electrophoresis

Adh-1 and Gal-3 on chromosome 3, relative position of 17:75 17:79 Alcohol dehydrogenase expression Beta-galactosidase isozymes in leaves, Gal-1, Gal-2, and Gal-3 Bifurcated mutant 157 (Gottschalk), bif-2 Chromosome 3 and En, linkage relationships among markers in Cotyledon color, proteins, isozymes, inheritance of Electrophoresis to distinguish varie.ties Electrophoretic analysis of seed amylases 15:60 Electrophoretir evidence of a specific seed albumin of fulvum 16:66 Electrophoretic mobility of seed amylases 19:50 Electrophoretic seed albumin patterns 15:51 Enzyme activities in seeds from field- and phytotron-cultivated plants 18:53 Histones and HMG-like proteins correlated with equivalent fractions of calf thymus 17:25 Isozymes of 6-phosphogluconate dehydrogenase 15:56 Isozyme variation at selected Loci Leucine aminopeptidase (LAP-2) variability 17:86 Linkage determinations for isozymic loci New gene, Mdh, for malatte dehydrogenase 18:54 New gene (Idh) coding isocitrate dehydrogenase linked with D on chromosome I L6:75 Orange cotyledons, Ore, and orange loaves, orl, new genes on chromosome 1 19:66 Protein and enzyme patterns in seeds from field- and phytotroncultivated phints 17:61 SDS-electrophoretic investigation of seed albumins 16:21 Seed albumins, SDS-electrophorosis of Seed proteins of chromosome mutants 16:68 Seed storage proteins of mutants, genet i< analysis of 17:63 Soluble auxin binding protein 17:22 16:29 Specific albumins, isolation of Thylakoid membrane polypeptides from wild type and chlorophyll deficient mutants 17:66 Wsp and isozyme locus Alat-p, linkage of 19:80

Environmental factors

Combining ability of year and spacing 18:10

Cross fertilization under different ecological conditions 16:38

Enzyme activities in seeds from field- and phytotron-cultivated plants 18:53

Flowering behavior of line R142F 16:54

Flowering of 18 genotypes under 3 photoperiods 15:21

Gene dgl in recombinants 19:9

Pod development

cultivated plants

18:56

Wsp and isozyme locus Alat-p, linkage of

Rb may be located on chromosome 3
Resistance to PEMV, Adh-1 marker for

17:61

Protein and enzyme patterns in seeds from field- and phytotron-

Genes affecting symbiotic N fixation 16:31 gp (yellow) and Gp (green) fruits, optical properties of Isogenic lines, competitive ability of 16:3.5 Mutant nod-3, highly nodulating in presence of nitrate 16:23 Natural cross fertilization under different ecological conditions (II) 17:43 Penetrance and seed production 16:19 Photo- and thermo-susceptible chlorophyll mutants Photoperiodic reaction of recombinant R 142 F 15:24 Production of 2n pollen and linkage relations of CC Protein and enzyme patterns in seeds from field- and phytotroncultivated plants 17:61 Seed production of 33 genotypes under continuous light Standard shape, new gene, 1st, for 19:84 Stomatal behavior before and after flowering in argenteum mutant 15:13 Stomata on pods of argenteum mutant 15:15 Temperature and flowering behavior of early flowering genotypes 16:11 Temperature and flowering of fasciated and bifurcated genotypes 17:20 Three-point linkage analysis involving Am-1-Af-IWilty mutant under water stress conditions Year and spacing affects combining ability Enzymes Adh-1 and Gal-3 on chromosome 3, relative position of Alcohol dehydrogenase expression 17:79 Beta-galactosidase isozymes in leaves, Gal-1, Gal-2, and Gal-3 17:76 Bifurcated mutant 157 (Gottschalk), bif-2 17:84 Chromosome 3 and En, linkage relationships among markers in 17:57 Cotyledon color, proteins, isozymes, inheritance ol 16:52 Electrophoresis to distinguish varieties 19:89 Electrophoretic analysis of seed amylases 15:00 Electrophoretic mobility of seed amylases 19:50 Enzyme activities in seeds from field- and phytotron-cultivated plants 18:53 Genes affecting symbiotic N fixation 16:31 Isozymes of 6-phosphogluconate dehydrogenase 15:56 Isozyme variation at selected loci 15:58 Isozymic locus, Aat-p, data for mapping of 19:76. Linkage determinations for isozymic loci 18:54 New gene, Mdh, for malate dehydrogenase New gene (Idh) coding isocitrate dehydrogenase linked with D on chromosome 1 16:75 N fixation, mutants defective in 19:17 Nitrate reductase activity, af st and tl on Nitrate reduction localization 18:27 Nodulation-defective mutants, new genes sym , sym , sym 18:33 PEPc in developing wrinkled and round seeds 16:64

Epistasis-hypostasis

Gene pal and seed coat color 16:43

New gene for dark purple testa, put 18:5

Orange cotyledons, Ore, and orange leaves, orl, new genes on

chromosome 1 19:66

Plant stature of na and le la cry^c 15:45

Tendrilled aeacia, tac,: an allele at the Uni locus 18:49

Three-point linkage analysis involving Am-1-Af-I 15:43

Yield components 15:11

Fasciation

Bifurcated mutant 157 (Gottschalk), bif-2 17:84

Flowering of fasciated recombinants in short days 18:17

Gene dql in recombinants 19:9

Genes influencing penetrance of big-1 for stem bifurcation 15:26

Genotype-dependent callus growth 16:27

Locus identity test crosses for fasciata lines 15:38

Mutation in autogamous plants with Low rates of cross fertilization 16:41

Penetrance and seed production 16:19

Seed albumins, SDS-electrophoresis of 17:4

Seed protein production 16:15; 18:3

Temperature and flowering of fasciated and bifurcated genotypes 17:20

Flowering

Allelism tests for some early flowering mutants 16:57

Branching: effect of flowering and length genes 18:12

Breeding early-maturing protein lines 19:12

Determinate growth, del: new gene on chromosome 7 19:72

Flowering behavior ol line R142F 16:54

Flowering of 18 genotypes under 3 photoperiods 15:21

Flowering in extremely short days 18:19

Flowering of fasciated recombinants in short days 18:17

Genes influencing penetrance of bif-1 for stem bifurcation 15:26

Inheritance of growth rate and node development in a diallel cross 16:8

Morphological variation in plants regenerated from long-term callus culture of pea 17:8

Penetrance and seed product ion 16:19

Photoperiodic react ion ot recombinant R 142 F 15:24

Stomatal behavior betore and alter flowering in argenteum mutant 15:13

Temperature and I lowering behavior of early flowering genotypes 16:11

17:20

Temperature- and flowering of fasciated and bifurcated genotypes

Flowers

Chromosomes 1 and 5, supplemental linkage data for 16:49

Gene for flower doubling 17:19

Pleiotropic effects and interactions of ar 17:56

Standard shape, new gene, 1st, for 19:84

Three-point linkage analysis involving Am-1-Af-I 15:43

Fruits

Branching: effect of flowering and length genes 18:12

1988 INDEX

Combining ability: effect of year and spacing Gibberellin and heterosis 18:59 (Errata 19:101 gp (yellow) and Gp (green) fruits, optical properties of 19:46 Orange.pod: WT 10 263 15:48 Photoenvironment within fruits of A Pu Pur and gp Pod development 18:56 Stomata on pods of argenteum mutant 15:15

Fruit set

Male sterility and outcrossing

Gene banks

Cultivar database 17:90 Geneva collection of genetic stocks 17:89

Genes

aero: linkage on chromosome 1 18:42 Antibiotics-mutagenesis tests: new gene, lws Ascochyta pisi race "C", inheritance of resistance to Beta-galactosidase isozymes in leaves, Gal-1, Gal-2, and Gal-3 Costata gene, lum-2, on chromosome 3 19:70 Cultivar database 17:90 Dark green seedcoat color, dp Determinate growth, det, nxw gene on chromosome 7 19:72 Gene for flower doubling 17:19 Genes affecting symbiotic N fixation 16:31 Gold necrosis, gn: new gene on chromosome 5 Internode length: further mutation at la locus Linkage relation of genes af-i on chromosome 1 and curl-tl on chromosome 7 19:77 Identity and allelism of mutant genes 1°):78 lol, new gene producing lobate leaflets Maternally inherited gene for cyanide resistant respiration, arp Mutagenesis: combined treatment by Nf and NEU Mutant nod-3, highly nodulating in presence of nitrate 16:23 Necrosis (nec): new gene on chromosome 5 17:68 New gene, Mdh, for malate dehydrogenase New gene, det, and its linkages on chromosome 1 48:45 New gene for dark purple testa, put 18:5 New gene (Idh) coding isocitrate dehydrogenase linked with I) on chromosome 1 N fixation, mutants defective in 19:17 Nodulation-defective mutants: new genes synr, sym", sym Nodulation in the presence of nitrate, nod-3 Nodulation resistant mutants, selection of Obscuratum phenomenon 17:40 Orange cotyledons, Orc, and orange leaves, orl: new genes on 19:66 chromosome 1 Orange cotyledons, Orc, a new gene for cotyledon color 16:70 Penetrance and seed production 16:19 Resistance to Fusarium wilt, genes for 19:41 Second gene arthritic (art-2) on chromosome 5 17:70 Swiecicki's papers too late for publication

Tendrilled acacia (tac): an allele at the Uni locus 18:49 Virus resistance genes 19:48

Germplasm

Germplasm 16:83

Germplasm and PSbMV in northern India, 1987 19:55

Pea research in Colombia 19:96 Stocks available 16:84; 18:69

Growth substances

Assay for genotype-dependent auxin-sensitivity with young seedlings

Gibberellin and heterosis 18:59 (Errata 19:101)

Internode length: further mutation at la Locus

Morphogenetic effects, auxin uptake and metabolish after root

application of auxins 15:28

Soluble auxin binding protein 17:22

Soluble auxin-binding protein: correlation with internode length and 17:32 callus formation

Test system for shoot application of auxins combined with phospholipids 15:29

Habit

Alleles at the na locus in lines L81 and WL1766 Branching: effect of flowering and length genes 18:12

Chromosomes 1 and 5, supplemental linkage data for

Determinate growth habit, det: isolation, symbolization, and linkage

HFP 4, a high yielding leafless strain

Internode length: further mutation at la locus

Morphological variation in plants regenerated from long-term callus

culture of pea 17:8

Plant stature of na and le la cry^c 15:45

Polyploids, artificial 18:32 Semidominant mutations 19:64

Herbicides

Test system for shoot application of auxins combined with phospholipids 15:29

Heterosis

Gibberellin and heterosis 18:59 (Errata 19:101)

Identity-allelism test

Alleles at the na locus in lines L81 and WL1766 16:55 Allelism tests for some early flowering mutants 16:57

Costata gene, lum-2, on chromosome 3 19:70

15:7 Dark green seedcoat color, dp

Determinate growth, det: new gene on chromosome 7 19:72

Identity and allelism of mutant genes 16:17

Locus identity test crosses for fasciata lines

19:74 •

Gold necrosis, gn: new year on classification of Male sterility, genetics and cytology of 16:68 16:60

New gene for dark purple testa, put 18:5 Nodulation-defective mutants: new genes sym7, sym8, sym9 18:33

Orange cotyledons, Orc, and orange leaves, orl: new genes on chromosome 1 19:66

Production of 2N pollen and linkage relations of cc 16:59 Second gene arthritic (art-2) on chromosome 5 17:70

Tendrilled acacia (tac): an allele at the Uni locus 18:49

Insect resistance

HFP 4, a high yielding leafless strain 18:21
Pea research in Colombia 19:96

In vitro culture

Genotype-dependent callus growth 16:27

In vitro culture of explants from one seedling 17:13

In vitro rooting of shoots 17:12

In vitro rooting of two genotypes 19:4

Morphological variation in plants regenerated from long-term callus culture of pea 17:8

Rooting in vitro and genotype 18:7 (Errata 19:10)

Shoot forming capacity in callus culture 17:10

Soluble auxin-binding protein: correlation with internode length and callus formation 17:32

Somatic embryogenesis 19:18

Somatic embryos, induction of 17:38

Tissue culture media for 9 varieties 19:93

Leaf

Costata gene, lum-2, on chromosome 3 19:70

Leaves

aero: linkage on chromosome 1 18:42

Afila and acacia, model for early phyllomorphogenesis of 19:15

Alcohol dehydrogenase expression 17:79

Beta-galactosidase isozymes in leaves, Gal-1, Gal-2, and Gal-3

Chlorophyll changes during ontogeny 17:65

Chromosomes I and 5, supplemental linkage data for 16:49

Costata gene, lum-2, on chromosome 3 19:70

Electrophoresis to distinguish varieties 19:89

Gene dql in recombinants 19:9

Genes influencing penetrance of bif-1 for stem bifurcation 15:26

Gold necrosis, gn: new gene on chromosome 5 19:74

HFP 4 a high yielding leafless strain 18:21

Isogenic lines, competitive ability of 16:35

Isozymes of 6-phosphogluconate dehydrogenase 15:56

Linkage relations of genes af-i on chromosome 1 and curl-tl on chromosome 7 19:77

lol, new gene producing lobate leaflets 19:78

Model of phyllomorphogenesis 19:25

Morphogenesis, leaf genotypes as models for 18:67

Morphological variation in plants regenerated from long-term callus culture of pea 17:8

Mutation in autogamous plants with low rates of cross fertilization 16:41 (Errata 17:42)

69

Necrosis (nec): new gene on chromosome 5 Nitrate reduction localization 18:27 Orange cotyledons, Orc, and orange leaves, orl: new genes on chromosome I 19:66 Orange pod: WT 10 263 15:48 Stomatal behavior before and after flowering in argenteum mutant 15:13 st on non-stipular parts of leaf 17:6 tac and apu, linkage relations Td, is it located on chromosome 3 or 4? 19:38 Three-point linkage analysis involving Am-1-Af-I 15:43 Wilty mutant under water stress conditions 15:18 Wsp and isozyme locus Alat-p, linkage of 19:80 Lethality Segregation of mutant genes 16:13 Linkage Adh-1 and Gal-3 on Chromosome 3, relative position of 17:75 aero: linkage on chromosome 1 18:42 Allelism tests for some early flowering mutants 16:57 Chromosome maps revised 19:20 Chromosome 5, revised linkage map of 17:14 Chromosome structure of L-108, Nilsson's N 11 15:33 Chromosome 3 and En, linkage relationships among markers in 17:57 (hromosomes 1 and 5, supplemental linkage data for 16:49 Chromosomes 1 and 7: supplementary linkage data Costata gene, lum-2, on chromosome 3 Determinate growth, det: new gene on chromosome 7 Determinate growth habit, det: isolation, symbolization, and linkage

dne, b, st on chromosome 3, linkage of 19:45

Genes affecting symbiotic N fixation 16:31

Cold necrosis, gn: new gene on chromosome 5 19:74

Hammarlund's K-line, a new interpretation 18:34

Isozyme variation at selected loci 15:58

Isozymic locus, Aat-p, data for mapping of 19:76

Linkage determinations for isozymic loci 15:54

Linkage groups 11 and IV, located by BSG-staining 17:15

Linkage of two chlorophyll mutations 16:10

Linkage on chromosomes 3 and 5 15:47

Linkage relations of genes af-i on chromosome 1 and curl-tl on

18:39

chromosome 7 19:77

Gene er: location elusive

lol, new gene producing lobate leaflets 19:78

Male sterility, genetics and cytology of 16:60

Necrosis (nee): new gene on chromosome 5 17:68

New gene, Mdh, for malate dehydrogenase 18:54

New gene, det, and its linkages on chromosome 1 18:45

New gene, Idh, coding isocitrate dehydrogenase linked with D on

chromosome 1 16:75

Orange cotyledons, Orc, and orange leaves, orl: new gene's on

chromosome 1 19:66

Production of 2N pollen and linkage relations of cc 16:59

Rb may be located on chromosome 3 19:40

Resistance to Fusarium wilt, genes for 19:41 Second gene arthritic (art-2) on chromosome 5 Sinuate leaf, sil, linked with Wsp 19:33 Supplementary linkage data 18:70 Swiecicki's papers too late for publication tac and apu, linkage relations 16:46 Td, is it located on chromosome 3 or 4? 19:38 Tendrilled acacia (tac): an allele at the Uni locus 18:49 Three-point linkage analysis involving Am-1-Af-I 15:43 Virus resistance genes 19:48 Wsp and isozyme locus Alat-p, linkage of 19:80 Yield components 15:11

Lodging

Breeding early-maturing protein lines 19:12

Marker lines

Linkage of two chlorophyll mutations 16:10 Linkage on chromosomes 3 and 5 15:47 Linkage relations of genes af-i on chromosome 1 and curl-tl on chromosome 7 19:77 lol, new gene producing lobate leaflets 19:78 Male sterility and outcrossing 16:62 Mutation in autogamous plants with low rates of cross fertilization (Errata 17:42) Plant stature of na and le la cry^c 15:45 Resistance to PEMV, Adh-1 marker for 19:82

Maturation and maturity

Breeding early-maturing protein lines 19:12 Pod development 18:56

Meetings

16th Stadler Genetics Symposium, March 19, 1984 15:63

Meiosis

Chromosome maps revised 19:20 Male sterility, genetics and cytology of Polyploids, artificial 18:32 Production of 2n pollen and linkage relations of cc • 16:59 Segregation of mutant genes 16:13 Tetraploids, cytology of 19:7

Mitosis

Chromosome maps revised 19:20 Chromosome 7 in interphase 18:61 Interchange lines, C-banding in 18:64 Sister chromatid exchange 19:86 Tetraploids, cytology of 19:7

Multi-marker lines

Chromosome 3 and En, linkage relationships among markers in Chromosomes 1 and 7: supplemental linkage data Costata gene, lum-2, on chromosome 3

Determinate growth, det: new gene on chromosome 7 19:72 18:39 Gene er: location elusive Gene pal and seed coat color 16:43 Gold necrosis, gn: new gene on chromosome 5 19:74 Isozymic locus, Aat-p, data for mapping of Linkage determinations for isozymic loci 15:54 New gene, det, and its linkages on chromosome 1 18:45 •New gene, Mdh, for malate dehydrogenase 18:54 Orange cotyledons, Orc, and orange leaves, orl: new genes on chromo-19:66 Pleiotropic effects and interactions of ar 17:56 Production of 2n pollen and linkage relations of cc Rb may be located on chromosome 3 19:40 19:41 Resistance to Fusarium wilt, genes for Sinuate leaf, sil, linked with Wsp 19:33 Td, is it located on chromosome 3 or 4^7

Multiple alleles

Locus identity test crosses for fasciata lines 15:38

Mutagenesis

Antibiotics-mutagenesis tests: new gene, Lws Costata gene, lum-2, on chromosome 3 19:70 Determinate growth, det: new gene on chromosome 7 Gold necrosis, gn: new gene on chromosome 5 19:74 Mutagenesis: combined treatment by Nf and NEU 17:72 Mutation in autogamous plants with low rates of cross fertilization Necrosis (nec): new gene on chromosome 5 17:68 N fixation, mutants defective in 19:17 Nitrogen fixation mutants, induction of 17:7 Nodulation-defective mutants: new genes sym7, sym8, sym9, 18:33 Nodulation in the presence of nitrate, nod-3 15:31 Second gene arthritic (art-2) on chromosome 5 17:70 Semidominant mutations 19:64 Stocks available 16:84

Mutants

Antibiotics-mutagenesis tests: new gene, Lws 17:50 Bifurcated mutant 157 (Gottschalk), bif-2 17:84 Chlorophyll changes during ontogeny 17:65 Chlorophyll mutant, low penetrance and varying expressivity 19:28 Chlorophyll mutants: absorption spectra 19:61 Costata gene, lum-2, on chromosome 3 19:70 Determinate growth, det: new gene on chromosome 7 Enzyme activities in seeds from field and phytotron-cultivated plants 18:53 Flowering of fasciated recombinants in short days 18:17 Flowering in extremely short days Genes affecting symbiotic N fixation 16:31 Genotype-dependent callus growth 16:27 Gibberellin and heterosis 18:59 (Errata 19:101) Gold necrosis, gn: new gene on chromosome 5 19:74

Identity and allelism of mutant genes 16:17 Internode length: further mutation at la locus Linkage of two chlorophyll mutations 16:10 Linkage relations of genes af-i on chromosome 1 and curl-tl on chromosome 7 19:77 19:78 lol, a new gene producing lobata leaflets Mutagenesis: combined treatment by Nf and NEU Necrosis (nee): new gene on chromosome 5 17:68 New gene for dark purple testa, put 18:5 Nodulation-defective mutants: new genes sym7, syn8, sym9, Nodulation resistant mutants, selection of 16:25 Penetrance and seed production Photo- and thermo-susceptible chlorophyll mutants 18:16 Production of 2n pollen and linkage relations of cc Root and shoot differences of highly nodulating mutant nod-3 and its parent variety 'Rondo' 17:30 Second gene arthritic (art-2) on chromosome 5 Seed albumins, SDS-electrophoresis of 17:4 16:15; Seed protein production 18:3 Seed storage proteins of mutants, genetic analysis of 17:63 Segregation of mutant genes Semidominant mutations 19:64 Somatic embryos, induction of 17:38 Stocks available 16:84 tac and apu, linkage relations 16:46 Thylakoid membrane polypeptides from wild type and chlorophyll deficient mutants 17:66

New varieties

Five new varieties licensed In Canada 19:100 Four new varieties 15:62 HFP 4, a high yielding leafless strain 18:21 New cultivars - dry peas 17:64 New dry pea varieties 19:100 New garden pea cultivars 16:83 New varieties from Poland 17:94 'Polar' - new garden pea variety 'Sublima' 15:62

Nodes and internodes

Alleles at the na locus In Line L81 and WL1766 16:55 Branching: effect of flowering and length genes Determinate growth, det: new gene on chromosome 7 19:72 Flowering in extremely short days 18:19 Gene dgl in recombinants 19:9 Genes influencing penetrance of bif-1 for stem bifurcation Inheritance of growth rate and node development in a diallel cross Internode length: art 19:59 Internode length: further mutation at la locus Root and shoot differences of highly nodulating mutant nod-3 and its parent variety 'Rondo' 17:30 Root/shoot interactions of genotypes 17:34

Soluble auxin-binding protein: correlation with internode length and callus formation 17:32

Temperature and-flowering of fasciated and bifurcated genotypes 17:20

Nodules and nodulation

Genes affecting symbiotic N fixation 16:31

Lateral root initiation in Rhizobium-inoculated seedlings of P. fulvum 18:37

Mutant nod-3, highly nodulating in presence of nitrate

N fixation, mutants defective in

Nitrogen fixation mutants, induction of

18:30 Nodulation capacity

Nodulation-defective mutants: new genes sym7, sym8, sym9,

Nodulation in the presence of nitrate, nod-3 15:31 Nodulation resistant mutants, selection of 16:25

Root and shoot differences of highly nodulating mutant nod-3 and its parent variety 'Rondo' 17:30

Pea industry

Dry pea production in Canada 19:97

Dry pea production in the U.S. 16:77

Pea research in Colombia 19:96

Penetrance

Bifurcated mutant 157 (Gottschalk), bif-2

Chlorophyll mutant, low penetrance and varying expressivity 19:28

Gene dql in recombinants 19:9

Genes influencing penetrance of bif-1 for stem bifurcation 15:26

Genotype-dependent callus growth 16:27

Identity and allelism of mutant genes 16:17

Penetrance and seed production 16:19

Photo- and thermo-susceptible chlorophyll mutants

Temperature and flowering behavior of early flowering genotypes 16:11 17:20

Temperature and flowering of fasciated and bifurcated genotypes

Photoperiodism

Allelism tests for some early flowering mutants 16:57

Branching: effect of flowering and length genes 18:12

Flowering behavior of line R142F 16:54

Flowering in extremely short days 18:19

Flowering of fasciated recombinants in short days

Protein and enzyme patterns in seeds from field- and phytotroncultivated plants 17:61

Photosynthesis

gp (yellow) and Gp (green) fruits, optical properties of 19:46 Photoenvironment within fruits of A Pu Pur and gp

Carotenoid and provitamin A of seeds with orange vs yellow 15:41 cotyledons

Carotenoid composition and provitamin A values of F2 seeds from the cross Wt 3527 (orc) x Wt 11145 (Orc) 17:51

Chromosomes 1 and 5, supplemental linkage data for Cotyledon color, proteins, isozymes, inheritance of 16:52 Dark green seedcoat color, dp 15:7 Gene pal and seed coat color 16:43 Natural cross fertilization under different ecological conditions (II) 17:43 New gene for dark purple testa, put 18:5 Obscuratum phenomenon Orange cotyledons 15:9 Orange cotyledons, Orc, and orange leaves, orl: new genes on chromosome 1 19:66 Orange cotyledons, Orc, new gene for cotyledon color Orange pod: WT 10 263 15:48 Photo- and thermo-susceptible chlorophyll mutants Photoenvironment within fruits of A Pu Pur and gp 15:49 Pleiotropic effects and interactions of ar 17:56 Pod development 18:56 Three-point linkage anzlysis involving Am-1-Af-I 15:43

Pleiotropy

New gene, Mdh, for malate dehydrogenase 18:54 Pleiotropic effects and interactions of ar 17:56 Root and shoot differences of highly nodulating mutant nod-3 and its parent variety 'Rondo' 17:30 Td, is it located on chromosome 3 or 4? 19:38 Three-point linkage analysis involving Am-1-Af-I 15:43 st on non-stipular parts of leaf

Pollen and pollination

Cross fertilization 15:40 Cross fertilization under different ecological conditions 16:38 Isozymes of 6-phosphogluconate dehydrogenase Male sterility and outcrossing Male sterility, genetics and cytology of 16:60 Mutation in autogamous plants with low rates of cross fertilization 16:41 (Errata 17:42) Natural cross fertilization under different ecological conditions (II) 17:43 Nectaries and insect visitors 17:47 Polyploids, artificial 18:32 Production of 2n pollen and linkage relations of cc 16:59 Segregation of mutant genes 16:13

Polymorphism

Alcohol dehydrogenase expression 17:79 Beta-galactosidase isozymes in leaves, Gal-1, Gal-2, and Gal-3 17:76 Leucine aminopeptidase (LAP-2) variability

Polyploidy

Chromosome structure of L-108, Nilsson's II 15:33 Hammerlund's K-line, a new interpretation 18:34 18:32 Polyploids, artificial Production of 2n pollen and linkage relations of cc 16:59 Tetraploids, cytology of

Proteins

Bifurcated mutant 157 (Gottschaik), bif-2 17:84

Breeding early-maturing protein lines 19:12

Cotyledon color, proteins, isozymes, inheritance of 16:52

DNA binding proteins, rapid method to detect 17:24

Dry pea production in Canada 19:97

Electrophoretic evidence of a specific seed albumin of P. fulvum 16:66

Electrophoretic seed albumin patterns 15:51

Enzyme activities in seeds from field and phytotron-cultivated plants 18:53

Histones and HMG-like proteins correlated with equivalent fractions of calf thymus 17:25

Protein and enzyme patterns in seeds from field- and phytotroncultivated plants 17:61

Screening for sulfur containing amino acids in seeds 17:36

SDS-electrophoretic investigation of seed albumins 16:21

Seed albumins, SDS-electrophoresis of 17:4

Seed protein production 16:15; 18:3

Seed proteins of chromosome mutants 16:68

Seed storage proteins of mutants, genetic analysis of 17:63

Soluble auxin binding protein 17:22

Soluble auxin-binding protein: correlal ion with internode length and callus formation 17:32

Specific albumins, isolation of 16:29

Thylakoid membrane polypeptides from wild type and chlorophyll deficient mutants 17:66

Vacuolar origin of protein bodies in parenchyma cells in cotyledons during seed development 17:17

Recombination

Assay for genotype-dependent auxin-sensitivity with voung seedlings 17:27

Enzyme activities in seeds from field and phytotron-cultivated plants 18:53

Flowering in extremely short days 18:19

Flowering of 18 genotypes under 3 photoperiods 15:21

Flowering of fasciated recombinants in short days 18:17

Gene dgl in recombinants 19:9

Genotype-dependent callus growth 16:27

Genes influencing penetrance of bif-1 for stem bifurcation 15:26

Genes affecting symbiotic N fixation 16:31

Identity and allelism of mutant genes 16:17

Linkage determintions for isozymic loci 15:54

Mutant nod-3, highly nodulating in presence of nitrate 16:23

Mutation in autogamous plants with low rates of cross fertilization 16:41 (Errata 17:42)

Penetrance and seed production 16:19

Photoperiodic reaction of recombinant R 142 F 15:24

Seed albumins, SDS-electrophoresis of 17:4

Seed production of 33 genotypes under continuous light 15:23

Seed protein production 16:15; 18:3

Soluble auxin-binding protein: correlation with internode length and

callus formation 17:32

Temperature and flowering behavior of early flowering genotypes 16:1.1 Temperature and flowering of fasciated and bifurcated genotypes 17:20

Roots and rooting

Alcohol dehydrogenase expression

In vitro rooting of shoots 17:12

In vitro rooting of two genotypes 19:4

Lateral root initiation in Rhizobium-inoculated seedlings of P. fulvum

Mutant nod-3, highly nodulating in presence of nitrate 16:23

Nitrate reduction, localization of 18:27

Nodulation capacity 18:30

Root and shoot differences of highly nodulating mutant nod-3 and its parent variety 'Rondo' 17:30

Rooting in vitro and genotype 18:7 (Errata 19:101)

Root/shoot interactions of genotypes

Roots, preliminary studies of 16:73

Sister chromatid exchange 19:86

Seeds and seed germination

Alcohol dehydrogenase expression 17:79

Bifurcated mutant 157 (Gottschaik), bif-2

Breeding early-maturing protein lines 19:12

Carotenoid and provitamin A of seeds with orange vs

yellow cotyledons 15:41

Carotenoid composition and provitamin A values of F2 seeds from the cross Wt 3527 (orc) x Wt LU45 (Orc) 17:51

Chromosomes 1 and 5, supplemental linkage data for

Combining ability: effect of year and spacing 18:10

Cotyledon color, proteins, isozymes, inheritance of 16:52

Cross fertilization under different ecological conditions

Dark green seedcoat color, dp 15:7

Electrophoresis to distinguish varieties 19:89

Electrophoretic evidence of a specific seed albumin of P. fulvum 16:66

Electrophoretic mobility of seed amylases 19:50

Electrophoretic seed albumin patterns 15:51

Enzyme activities in seeds from field and phytotron-cultivated plants 18:53

Gene dgl in recombinants 19:9

Gene pal and seed coat color 16:43

Genes influencing penetrance of bif-1 for stem bifurcation 15:26

Gibberellin and heterosis 18:59 (Errata 19:101)

Isogenic lines, competitive ability of 16:35

Lateral root initiation in rhizobium-inoculated seedlings of P. fulvum 18:37

Natural cross fertilization under different ecological conditions (II) 17:43

New gene for dark purple testa, put 18:5

Obscuratum phenomenon 17:40

15:9 Orange cotyledons

Orange cotyledons, Orc, and orange leaves, orl: new genes on chromosome 1 19:66

Orange cotyledons, Orc, new gene for cotyledon color 16:70 Penetrance and seed production 16:19 PEPc in developing wrinkled and round seeds 16:64 Pleiotropic effects and interactions of ar 17:56 Protein and enzyme patterns in seeds from field- and phytotroncultivated plants 17:61 Rb may be located on chromosome 3 Resistance to PEMV, Adh-1 marker for 19:82 Screening for sulfur containing amino acids in seeds 17:36 SDS-electrophoretic investigation of seed albumins 16:21 Seed albumins, SDS-electrophoresis of Seed protein production 16:15 Seed storage proteins of chromosome mutants Seed storage proteins of mutants, genetic analysis of 17:63 Specific albumins, isolation of 16:29 Three-point linkage analysis involving Am-1-Af-I Vacuolar origin of protein bodies in parenchyma cells in cotyledons during seed development 17:17

Selection methods

Mutation in autogamous plants with low rates of cross fertilization 16:41 (Errata 17:42)

Nodulation resistant mutants, selection of 16:25

Societies

Fifth International Lupine Conference 19:102
International Food Legume Research Conference on Pea, Lentil, Faba bean,

and Chickpea 17:inside back cover
Second International Legume Conference on the Biology of the Leguminosae

17:inside back cover

Sterilty-fertility

Gene for flower doubling 17:19

Hammarlund's K-line, a new interpretation 18:34

Male sterility and outcrossing 16:62

Male sterility, genetics and cytology of 16:60

Pleiotropic effects and interactions of ar 17:56

Polyploids, artificial 18:32

Production of 2n pollen and linkage relations of cc

Production of 2n pollen and linkage relations of cc 16:59 Tendrilled acacia (tac): an allele at the Uni locus 18:49

Taxa

Electrophoretic analysis of seed amylases 15:60

Electrophoretic evidence of a specific seed albumin of P. fulvum 16:66

Electrophoretic seed albumin patterns 15:51 Isozyme variation at selected loci 15:58

Lateral root initiation in Rhizobium-inoculated seedlings of P. fulvum 18:37

Leucine aminopeptidase (LAP-2) variability 17:86.

Natural cross fertilization under different ecological conditions (11) 17:43

Rooting in vitro and genotype 18:7 (Errata 19:101)
SDS-electrophoretic investigation of seed albumins 16:23

Somatic embryos, induction of 17:38 Specific albumins, isolation of 16:29 Td, is it located on chromosome 3 or 4? 19:38 Tetraploids, cytology of 19:7

Varieties

78

Dry pea production in Canada 19:97

Electrophoresis to distinguish varieties 19:89

Germplasm and PSbMV in Northern India, 1987 19:55

Tissue culture media for 9 varieties 19:93

Vegetative propagation

Somatic embryogenesis 19:18

Wax and waxiness

Genotype-dependent callus growth 16:27 Genes influencing penetrance of bif-1 for stem bifurcation 15:26 Identity and allelism of mutant genes 16:17 Morphological variation in plants regenerated from long-term callus culture of pea 17:8 Penetrance and seed production 16:19 tac and apu, linkage relations 16:46 Temperature and flowering behavior of early flowering genotypes 16 Temperature and flowering of fasciated and bifurcated genotypes 17

Yield

Branching: effect of flowering and length genes 18:12 Breeding early-maturing protein lines 19:12 Combining ability: effect of year and spacing 18:10 Dry pea production in Canada 19:97 Flowering of fasciated recombinants in short days 18:17 Genes influencing penetrance of bif-1 for stem bifurcation 15:26 Hfp4, a high yielding leafless strain 18:21 Isogenic lines, competitive ability of Pea research in Colombia 19:96 Penetrance and seed production 16:19 Photoperiodic reaction of recombinant R 142 F 15:24 Seedborne mosaic virus, geographic origin of 18:22 Seed production of 33 genotypes under continuous light Seed protein production 16:15; 18:3 Semidominant mutations 19:64 st on non-stipular parts of leaf 17:6 Yield components 15:11

<u>AUTHORS</u>

Abou-Salha, A.	15:26; 16:19; 17:4; 18:3
Adamo, F.	19:4
Auld, D. L.	18:5; 19:93
Bland, M. Blixt, S. Boylen, L.	15:3; 16:4 17:8, 10 15:7, 62 18:5 15:9, 51; 16:66, 70; 19:50 15:48 17:90 17:6; 18:7; 19:4 19:7 18:5 15:11; 16:6,8; 18:10
Dial, M. J. Donkin, M. E. Drozd, A. M.	18:5 15:13, 15, 18; 19:46 19:31
Engvild, K. C. Errico, A. Ezhova, T. A.	17:7 19:7 16,10; 17:8, 10
Filippone, E. Folkeson, D. Floyd, R. S. Frusciante, L.	17:12, 13; 18:7; 19:4 17:14, 15 18:12 17:54
Gaul, E. George, J. Girard, E. Gostimski, S. A. Gottschalk, W.	17:17 19:50 19:96 16:10; 17:8, 10 15:21, 23, 24, 26; 16:11, 13, 15, 17, 19; . 17:19, 20; 18:12, 16, 19; 19:9
Grillo, S. Gritton, E. T. Groom, K. Gupta, K. R.	16:21, 68; 17:63 16:59, 60, 62, 73 16:57 18:21
Hajek, K. Hampton, R. O. Hayward, I.E. Henschke, R. Herlt, M. Hovinen, S. Hull, A. Hull, T.	17:22 15:3; 18:22; 19:55 15:49; 18:56 17:24 17:25 19:12 19:46 15:13, 15, 18
Ingensiep, H. W.	15:28, 29; 17:27; 18:67; 19:15, 25

```
15:31; 16:23, 25; 17:30
Jacobsen, E.
Jacobsen, E.
Jacobsen, H.-J.
Jakubek, M.
                        16:27
16:29
                          16:27, 17:32; 19:18
Jakubek, M.
Jensen, E. 'S.
                         18:27
Jensen, F. H.
                         17:34; 18:30
Kasperek, G.
                        18:32
                        16:31; 18:33; 19:17
15:51; 16:66
16:83; 18:69
17:86
Kneen,
Kozubek, E.
Kraft, J. M.
Kneen, B. E.
                         17:36
                         17:38; 19:18
Kysely, W.
                      15:33;
16:31;
16:35;
Lamm, R. L.
                                   18:34;
                                           19:20
Lamm, R. L.
LaRue, T. A.
                                  18:33; 19:17
Leone, A.
                                   17:54
                        19:15; 19:25
15:36, 38, 40; 16:38, 41; 17:40, 43, 47, 50;
Lenz, J.
Loennig, W.-E.
                           19:28
                         19:93
LeTourneau, D. J.
Lobo, M.
                          19:96
                        18:37
Lommen, W. J. M.
Ludwicki, J.
                         15:42; 17:51
Makasheva, R. Kh. 19:31
                          17:54
Marano, B.
Martin, E. S.
                         15:13, 15, 18
Marx, G. A.
                         15:43, 45, 47, 54, 62; 16:43, 46, 49, 75;
                            17:56, 57, 75, 89; 18:39, 42, 45, 49, 70;
                            19:33, 35, 38, 40
Mclnnis, P.
                         17:89
Mogno, M. R.
                         17:63
Monti, L. M.
                         17:6
Moy, S.
                          15:48
Muehlbauer, F. J.
                       16:77; 19:41
Muller, H. P.
                         16:52; 17:61; 18:53
                         16:54, 55, 57; 18:12; 19:45, '59, 99
Murfet, I. C.
Musgrave, M. E.
                         19:99
Myers/ J. R.
                          16:59, 60, 62
                          19:86
Neumann, A.
Nijdam, H.
                          15:31
Nozzolillo, C.
                         15:48
Nucken, E.
                         17:24
                         17:75, 79; 18:54
Pagowska, E.
                        16:83; 17:94
15:15, 49; 16:64; 18:56; 19:46
17:57; 19:48, 82
Pedzinski, M.
Price, D. N.
Provvidenti, R.
Przybylska, J.
                         15:15, 60; 16:66; 19:50
Rao, R.
                         16:21, 68; 17:63
```

Zimniak-Przybylska, .. 15:51, 60; 19:50, 89

```
19:86
Rapp, R.
Reid, J. B.
                         19:52
Rishi, N.
                        19:55
Rothwell, R. N.
                        19:59
Salha, A. A.
                         16:27
Schmitz, R.
                        17:65;
                                 19:61
Schuil, A.
                        17:30
Schwarz, H. P.
                        17:66
Sideow, J. N.
                        19:99
Sidorova, K. K.
                        18:59;
                                 19:64
Slinkard, A. E.
                        19:97
Smith, C.
                        15:15
Smith, C. M.
                        15:49
Stencel, M.
                        17:36
Swiecicki, W.
                         19:100
Swiecicki, W. K. '
                        15:9, 41; 16:70; 17:51, 68, 70, 72, 86; 19:66,
                          70, 72, 74, 76, 89, 100
Taffs, J. B.
                         16:64
Thil 1 , 1). C.
                         19:93
Trifu, I.
                         19:77, 78
Uzhintseva, L. P.
                         19:64
Veitenheimer, E. E.
                         1.6:73
Wang, f.
                         15:18
                         15:54, 56, 58; 16:31, 75; 17:57, 75, 76;
Weeden, N. K.
                          18:54; 19:80, 82
Winfield, P.J.
                         17:90;
                                19:84
Wlodarczyk, A.
                         17:94
Wolff, G.
                         17:81, 84; 18:61, 64; 19:86
Wolko, B.
                         17:36, 86; 19:76, 89
Yenne, S. P.
                         19:93
```

GENES

```
15:9, 43, 49, 54; 16:13, 31, 43, 49, 59; 17:40,
A-a
                           56, 57; 18:5, 39, 48, 54, 56; 19:35, 38, 66,
                           76,80
                         17:57
Aat-c-aat-c
Aat-m-aat-m
                         19:80
                         18:54; 19:76
Aat-p-aat-p
Aat-p-Art-pl
                         18:48
Ac-ac
                        19:15
Acp-l-acp-1
                        19:80
                         17:57, 75
Acp-3-acp-3
                         17:57, 75; 19:82
Adh-l-adh-1
ADH-l-Adh-1
                        17:79
ADH-2-Adh-2
                        17:79
ADH-laa
                         17:79
ADH-1bb
                         17:79
Aero-aero
                         18:42, 19:35
Af-af
                         15:43; 16:35, 41, 46, 49, 61; 17:6, 11, 43,
                           54, 68; 18:7, 27, 42, 49, 67, 69; 19:4, 12,
                           15; 19:35, 77, 89
Alat-p-alat-p
                         19:80
Alt-alt
                         18:16
Am-1-am-1
                         15:43; 16:49; 17:56
                         15:43, 54; 17:56
Am-2-am-2
                         16:46; 17:57; 18:39, 49; 19:40
Apu-apu
Ar-ar
                         17:56
                         15:13, 15; 18:7, 42
Arg-arg
                        19:99
arp+-arp~
                         17:70; 19:59
Art-art
                         17:70
Art-l-art-1
Art-2-art-2
                         17:70,74
                         19:35
Au-au
                         15:47, 54; 16:43, 61; 17:56, 57, 75, 87;
B-b
                           18:39, 49; 19:20, 38, 40, 45, 66, 70; 19:80
                         15:26; 16:11, 15, 17, 19, 27; 17:4, 20; 18:3
Bif-l-bif-1
                         16:19; 17:20, 84
Bif-2-bif-2
Bt-bt
                         18:45; 19:33, 35, 80
Bulf-bulf
                         17:57; 18:39
Ca-ca
                         16:43
Cal-cal
                         16:43
Cat-cat
                         16:43
                         16:59
Cc-cc
Ce-ce
                         16:49; 17:14; 18:34
                         16:10; 17:8
Chi-chi
Chi-6-chi-6
                         17:57; 18:39
Coch-coch
                         16:59; 18:67; 19:40
                        15:55; 16:49
Cov-cov
                         17:14; 18:34; 19:74
Ср-ср
Cp-l-cp-1
                         17:68
                         15:47; 16:49, 61
Cr-cr
Creep-creep
                         16:49
Cri-cri
                         18:34
                         15:45; 17:56; 18:12; 19:52
Cry-cry
```

```
Cryc-cryc
                         15:45; 18:13; 19:52
CryS-cry<sup>s</sup>
                         15:45; 18:13; 19:52
Curl-curl
                        18:45; 19:33, 35, 77
Cyv-cyv
                        19:48
Cyv-2-cyv-2
                        19:48
                        15:54; 16:75; 18:34, 54; 19:66, 80
D-d
D_{M} - q_{co}
                         19:38
Dem-dem
                        16:43
Den-den
                        16:43
                        18:45, 48; 19:31, 35, 72
Det-det
                        15:24; 16:13; 17:68; 19:9, 74
Dgl-dg]
Dim-dim
                        17:4
Dim-l-dim-1
                        15:26; 17:20
                        16:43
Disp-disp
                        16:54, 57; 18:12; 19:45
Dne-dne
                        15:7
ab-ad
                        15:11; 16:57; 18:13
E-e
                        15:26; 16:17, 19, 27; 18:19
Efr-efr
                        15:3, 54; 17:57; 19:48, 82
En-en
                        15:54; 18:39
Er-er
Er-2-er-2
                        18:39
Est-3-est-3
                        18:54
Est-4-est-4
                        19:80
                        15:54; 16:43; 17:40; 18:5; 19:80
F-f
Fa-fa
                        15:38; 16:41; 17:42, 43; 19:41, 89
Fa-2-fa-2
                        15:38
Fas-las
                        15:38; 16:43; 18:7
Fis-fis
                        15:24
Fl-fl
                         18:42
Fnw-fnw
                         19:41
Fs-fs
                        15:47, 55; 16:43, 49; 17:14, 40; 18:5, 34;
                          19:20
Fw-fw
                         19:41
"Fwf"-"fwf"
                        19:41
Gal-l-gal-1
                        17:76
Gal-2-gal-2
                        17:76
                        17:57, 75, 76
Gal S-gal-3
Gbp-gbp
                        19:9
                     . 18:39
Gl-gl
Gla-gla
                        15:7
Gn-gn
                        19:74
Got -1-got -I
                        19:76, 90
Goi 2 got -2
                        19:90
                        15:47, 49, 55; 16:10, 49, 61; 17:14, 68, 70;
Gp-gp
                          18:34, 56; 19:20, 46, 74, 77, 78, 80
                        16:43
Gri-gri
Gt.y-gty
                         18:39
H-h
                         15:55
Hr-hr
                        16:54, 57; 18:12
                        15:9, 40, 43, 54; 16:38, 49, 59, 61, 70; 17:11,
I-i
                          51; 18:42, 49, 54; 19:35, 66, 77
Idh-idh
                        16:31, 75; 18:54; 19:66
11-i1
                        17:8
Ins-ins
                         16:43
```

```
PNL Volume 20
```

Orl-orl

Orp-orp

```
17:4
  Ion-ion
                              16:15
  Ipc-ipc
  K-k
                              15:54;
                                       16:43; 19:66
  L-1
                              19:78
  La-la 15:45; 18:12; 19:52
  La"(190)"-<sub>la</sub>.-(R90)"
                                                19:53
  Lap-l-lap-1 15:54; 17:75, 87; 19:82, 89
  Lap-2-lap-2
                              17:57, 75, 87; 19:70, 89
  Le le
                              15:54; 16:43, 59, 61, 62; 17:56;
                                19:20, 41, 52, 59, 70, 77, 78, 80
 Lf-If
                                      18:39; 19:76
                              16:57
 Lf<sup>a</sup>lf<sup>a</sup>
                              16:57
 Lfd-lfd
                              16:54;
                                       18:12
 Th-1h
                              19:52, 59
 Lk-lk
                              18:13;
                                      19:52
 Lm-lm
                              19-52
 Lob-lob
                              16:43
 Lol-lol
                              19:78
 Lr-lr
                              19:48
 Ls-ls
                             18:13;
                                      19:52
 Lst-lst
                             19:84
 Lum-lum
                             19:41
 Lum-l-lum-1
                             19:70
 Lum-2-lum-2
                             19:70
 Lw-lw
                             19:52
 Lws-lws
                             17:50
M-M
                             16:43;
                                      17:57; 18:49; 19:40, 70
Mdh-mdh
                             18:54
Mifo-mifo
                             16:43;
                                      19:66
Mo-mo
                             15:54,
                                      19:48
Mp-mp
                             16:43
Ms-l-ms-1
                             16:61
Ms-2-ms-2
                             16:60, 62
Ms-3-ms-3
                             16:60
Ms-4-ms-4
                             16:61
Ms-5-ms-5
                             16:60, 62
                             16:60, 62
Ms-6-ms-6
Ms-7-ms-7
                             16:60, 62
Ms-8-ms-8
                             16:60
Ms-9-ms-9
                            16:60, 62
Ms-10-ms-10
                            16:60, 62
Ms-11-ms-11
                            16:60, 62
N-n
                             18:56, 70; 19:38, 41, 66
Na-na
                                     16:55; 18:13; 19:59
                            15:45;
                            17:68;
                                     19:74
Nec-nec
Nod-1-nod-1
                            16:31;
                                     18:30
Nod-2-nod-2
                            16:31;
                                     18:30
Nod-3-nod-3
                            15:31; 16:23, 25, 31
Np-np
                            16:61;
                                     19:41
0-0
                            19:66, 74
Oh-oh
                                     16:43;
                                              17:56;
                            15:33;
                                                       19:66
Orc-orc
                                              18:45, 48; 19:66
                            16:70;
                                     17:51;
```

18:48;

15:49

19:56, 74

```
P_p
                          15:33, 56
Pal-pal
                          16:43
6Pdg-l-6pdg-l
                          19:90
6Pdq-2-6pdq-2
                          19:89
                          19:80
Pep-4-pep-4
6Pgd-c-6pdg-c
                          19:89
                          19:80
6Pgd-p-6pgd-p
Pl-pl
                          15:33, 54; 16:55, 61; 19:38, 77, 80
                          19:48
Pmv-pmv
                          16:43
Pre-pre
                          15:49, 56
Pu-pu
                          15:49, 56; 19:66
Pur-pur
Put-put
                          18:5
                          19:66
Ру-ру
                          15:9, 40, 54; 16:59, 61, 64; 17:11, 14;
R-r
                            18:45, 48, 49; 19:20, 31, 33, 35, 40, 72, 80
Rb-rb
Rag-rag
                          18:39
Red-red
                          16:61
Rrn-2
                          19:80
Rup-rup
                          19:66
S-s
                          16:43; 19:66
                          18:22; 19:48, 55
Sbm-sbm
Sbm-2-sbm-2
                          19:48
Sbm-3-sbm-3
                          19:48
Sbm-4-sbm-4
                          19:48
Sq-sq
                          15:26;
                                  16:19, 27; 17:4;
                                                       18:3
Sil-sil
                          18:42; 19:33
                          16:54, 57; 18:12
Sn-sn
Sru-sru
                          19:66
                          15:47, 54; 16:35, 43, 4b, 61; 17:6, 54, 56, 57,
St-st
                            68, 75; 18:27, 39, 49; 19:12, 20, 40, 45, 66,
                            70, 77, 78, 80
Str-str
                          16:43
Sym-1-sym-1
                          16:31
Sym-2-sym-2
                          16:31
Sym-3-sym-3
                          16:31
Sym-4-sym-4
                          16:31
                                   18:33;
                                           19:17
Sym-5-sym-5
                          16:31;
Sym-6-sym-6
                          16:31
Sym-7-sym-7
                          18:33;
                                   19:17
Sym-8-sym-8
                          18:33;
                                   19:17
Sym-9-sym-9
                          18:33;
                                   19:17
Sym-10-sym-10
                          19:17
Sym-ll-sym-11
                          19:17
Sym-12-sym-12
                          19:17
Sym-13-sym-13
                          19:17
                          16:46; 17:57; 18:39, 49, 67; 19:40, 82
Tac-tac
Tac-tac<sup>B</sup>
                          18:49
Tac-tac<sup>s</sup>
                          18:49
Td-td
                          16:43; 19:38, 41, 80
Te-te
                          15:55; 17:68, 70; 19:66, 74
Tl-tl
                          15:55; 16:35, 41, 46, 59, 61; 17:6, 11, 14, 54;
                            18:27, 45, 48, 67; 19:31, 35, 72, 77, 78, 80
```

Z-z

86 PNL Volume 20 1988 INDEX

16:43; 17:14, 68; 18:5; 19:66 U–u $U^{\text{st}} - u$ 18:5,34 Uni-uni 18:49, 67; 19:70 $\mathtt{Unitac}_{\mathtt{-uni}}$ 18:49 V-v . 15:11; 16:61; 18:56; 19:20, 41 Ve-ve 16:43 Vi-vi 16:10 Veg-veg 16:57; 18:12 Wa-wa 15:33 Was-was 18:70; 19:38, 41 15:33; 16:43; 19:66 Wb-wb Wel-wel 15:47; 18:49 Wex-wex 15:47 Wlo-wlo 15:33, 45, 55; 16:46, 55, 61; 19:33, 78 Wil-wil 15:18 Wsp-wsp 17:14; 18:45; 19:33, 80

15:54; 16:43; 17:56, 70; 19:38