

20 November 2018
EMA/HMPC/432277/2015
Committee on Herbal Medicinal Products (HMPC)

List of references supporting the assessment of *Fragaria vesca* L., *Fragaria moschata* Weston, *Fragaria viridis* Weston and *Fragaria x ananassa* (Weston) Duchesne ex Rozier, folium

Final

The Agency acknowledges that copies of the underlying works used to produce this monograph were provided for research only with exclusion of any commercial purpose.

Akerreta S, Cavero RY, Calvo MI. First comprehensive contribution to medical ethnobotany of Western Pyrenees. *J Ethnobiol Ethnomed* 2007, 3:26, in press, doi: 10.1186/1746-4269-3-26

ARS. Fragaria. Agricultural Research Service 2016. Available at: <https://search.usa.gov/search?query=Fragaria&affiliate=agriculturalresearchservicears>. Accessed: November 2016

Blaschek S, Ebel E, Hackental U, Holzgrabe K, Keller K, J., Reichling J, et al., editors. Hagers Handbuch der Drogen und Arzneistoffe. Springer Medizin Verlag, Heidelberg 2006

Borah M, Ahmed S, Das S. A comparative study of the antibacterial activity of the ethanolic extracts of *Vitex negundo* L., *Fragaria vesca* L., *Terminalia arjuna* and *Citrus maxima*. *Asian J Pharm Biol Res* 2012, 2(3):183-187

Bobowska M, Gobiec K, Grzęda W, Sadowski Z. Folium Fragariae. Mały Poradnik Terapeutyczny. Państwowy Zakład Wydawnictw Lekarskich, Warszawa 1977, 73-74

Bundesanzeiger, amended in Bundesanzeiger No. 22a of 1 February 1990. Fragaria. Available at: <http://www.heilpflanzen-welt.de/1990-02-Fragariae-folium-Erdbeerblaetter>. Accessed: November 2016

Buricova L, Andjelkovic M, Reblova Z, Jurcek O, Kolehmainen E, Verhe R, et al. Antioxidant capacities and antioxidants of strawberry, blackberry and raspberry leaves. *Czech J Food Sci* 2011, 29:181-189

Buricova L, Reblova Z. Czech medicinal plants as possible sources of antioxidants. *Czech J Food Sci* 2008, 26(2):132-138



Camejo-Rodrigues J, Ascensão L, Bonet MA, Vallès J. An ethnobotanical study of medicinal and aromatic plants in the Natural Park of "Serra de São Mamede" (Portugal). *J Ethnopharmacol* 2003, 89(2-3):199-209

De Smet PAGM. Legislative Outlook on the Safety of Herbal Remedies (in) Adverse Effects of Herbal Drugs 2, 1993

Dhole AR, Mohite SK, Magdum CS. Pharmacognostical evaluation of *Fragaria vesca* Linn leaf. *Int J Phytopharmacy* 2014, 4(4):117-119

Dias IM, Barros L, Morales L, Sanchez-Mata MC, Oliveira BPP, Ferreira ICFR. Nutritional parameters of infusions and decoctions obtained from *Fragaria vesca* L. roots and vegetative parts. *LWT-Food Science and Technology* 2015a, 62:32-38

Dias MI, Barros L, Fernandes IP, Ruphuy G, Oliveira BPP, Santos-Buelga C, et al. A bioactive formulation based on *Fragaria vesca* L. vegetative parts: Chemical characterization and application in κ-carrageenan gelatin. *J Funct Foods* 2015b, 16:243-255

Deutscher Arzneimittel-Codex (DAC). Erdbeerblätter. *Fragariae folium*. 2004, E-065, pp. 1-4Dyduch M, Najda A. Contents of secondary metabolites at various anatomical parts of three wild strawberry (*Fragaria vesca* L.) cultivars. *Herba Polonica* 2009, 55:147-152

Eriksson NE, Möller C, Werner S, Magnusson J, Bengtsson U, Zolubas M. Self-reported food hypersensitivity in Sweden, Denmark, Estonia, Lithuania, and Russia. *J Investig Allergol Clin Immunol* 2004, 14(1):70-79

Fecka I. Development of Chromatographic Methods for Determination of Agrimoniin and Related Polyphenols in Pharmaceutical Products. *J AOAC Int* 2009, 92(2):410-418

Gardner Z, McGuffin M. Botanical Safety Handbook. *Fragaria* spp. *American Herbal Products Association*, Taylor and Francis- CRC Press, New York 2013, 374-375

Goun EA, Petrichenko VM, Solodnikov SU, Suhinina TV, Kline MA, Cunningham G, et al. Anticancer and antithrombin activity of Russian plants. *J Ethnopharmacol* 2002, 81(3):337-342

Grattan CE, Harman RR. Contact urticaria to strawberry. *Contact Dermatitis* 1985, 13(3):191-192

Gündüz K. Strawberry: phytochemical composition of strawberry (*Fragaria x ananassa*). Nutritional Composition of Fruit Cultivars, Elsevier 2016:733-753, in press, <http://dx.doi.org/10.1016/B978-0-12-408117-8.00030-1>

Haffner S, Schultz O-E, Schmid W, Braun R. Normdosen gebräuchlicher Arzneistoffe und Drogen. 21., aktualisierte und erweiterte Auflage. Wissenschaftliche Verlagsgesellschaft Stuttgart 2016

Haghi G, Hatami A. Simultaneous quantification of flavonoids and phenolic acids in plant materials by a newly developed isocratic high-performance liquid chromatography approach. *J Agric Food Chem* 2010, 58(20):10812-10816

Hampel D, Mosandl A, Wüst M. Biosynthesis of mono-and sesquiterpenes in strawberry fruits and foliage: ^{2}H labeling studies. *J Agric Food Chem* 2006, 54(4):1473-1478

Havlik J, Gonzalez de la Huebra R, Hejtmankova K, Fernandez J, Simonova J, Melich M, et al. Xanthine oxidase inhibitory properties of Czech medicinal plants. *J Ethnopharmacol* 2010, 132(2):461-465

Hensel W. Medicinal Plants of Britain and Europe. Wild Strawberry (*Fragaria vesca*). A&C Black Publishers, London 2008, 98

Hiller K, Melzig MF. Lexikon der Arzneipflanzen und Drogen. Spektrum Akademischer Verlag, Heidelberg, Berlin 2003

Hummer KKE, Bassil N, Njuguna W. *Fragaria*. In: Kole C, editor. Wild Crop Relatives: Genomic and Breeding Resources, Temperate Fruits. Springer-Verlag, Berlin 2011, 17-44

Hyun TK, Kim JS. Genomic identification of putative allergen genes in woodland strawberry (*Fragaria vesca*) and mandarin orange (*Citrus clementina*). *Plant Omics J* 2011, 4(7):428-434

Ivanov IG. Determination of biologically active substances with antioxidant potential in different extracts of *Fragaria vesca* L. leaves and flowers. *J Pharmacogn Phytochem* 2018; 7(5):2733-2737

Ivanov I, Petkova N, Denev P, Pavlov A. Polyphenols content and antioxidant activities in infusion and decoction extracts obtained from *Fragaria vesca* L. leaves. *Sci Bull Series F. Biotechnol* 2015, 19:145-148

Ivanov I, Petkova N, Pavlov A, Denev P. Optimization of procyanidine extraction process from *Fragaria vesca* L. leaves. *Sci Bull Series F Biotechnol* 2014, 18:115-118 (Abstract)

Jarić S, Popović Z, Mačukanović-Jocić M, Djurdjević L, Mijatović M, Karadžić B, et al. An ethnobotanical study on the usage of wild medicinal herbs from Kopaonik Mountains (Central Serbia). *J Ethnopharmacol* 2007, 111:160-175

Katalinic V, Milos M, Kulisic T, Jukic M. Screening of 70 medicinal plant extracts for antioxidant capacity and total phenols. *Food Chem* 2006, 94:550–557

Kosch A. Handbuch der Deutschen Arzneipflanzen. *Fragariae Folium*. Springer, Berlin 1939, 153-154

Labokas J., Bagdonaitė E. Phenotypic diversity of *Fragaria vesca* and *F. viridis* in Lithuania. *Biologija* 2005, 3:19–22

Lamaison JL, Carnat A, Petitjean-Freytet C. Teneur en tanins et activité inhibitrice de l'elastase chez les Rosaceae. *Ann Pharm Fr* 1990, 48(6):335-340

Leporatti ML, Ivancheva S. Preliminary comparative analysis of medicinal plants used in the traditional medicine of Bulgaria and Italy. *J Ethnopharmacol* 2003, 87(2-3):123-142

Liberal J, Francisco V, Amaral MT, Marques C, Lopes MC, Cruz MT, et al. Targeting proteasome and autophagy with *Fragaria vesca* L. *Planta Med* 2012, 78 - PD7, in press, doi: 10.1055/s-0032-1320365

Liberal J, Francisco V, Costa G, Figueirinha A, Amaral MT, Marques C, et al. Bioactivity of *Fragaria vesca* leaves through inflammation, proteasome and autophagy modulation. *J. Ethnopharmacol* 2014, 158:113-122

Liberal J, Costa G, Carmo A, Vitorino R, Marques C, Domingues MR, et al. Chemical characterization and cytotoxic potential of an ellagitannin-enriched fraction from *Fragaria vesca* leaves. *Arabian J Chem* 2015, in press, <http://dx.doi.org/10.1016/j.arabjc.2015.11.014>

Liston A, Cronn, Ashman TL. *Fragaria*: a genus with deep historical roots and ripe for evolutionary and ecological insights. *Am J Bot* 2014, 101(10):1686-1699

Lundberg M, Töpel M, Eriksen B, Nylander JA, Eriksson T. Allopolyploidy in Fragariinae (Rosaceae): comparing four DNA sequence regions, with comments on classification. *Mol Phylogenet Evol* 2009, 51(2):269-280

Łuczaj Ł. Archival data on wild food plants used in Poland in 1948. *J Ethnobiol Ethnomed* 2008, 4: 4, in press, doi: 10.1186/1746-4269-4-4

Mabberley DJ. Potentilla and Fragaria (Rosaceae) reunited. *Telopea* 2002, 9(4):793-802

Maliníková E, Kukla J, Kuklová M, Balážová M. Altitudinal variation of plant traits: morphological characteristics in *Fragaria vesca* L. (Rosaceae). *Ann For Res* 2013, 56(1):79-89

McCutcheon AR, Stokes RW, Thorsona LM, Ellis SM, Hancock REW, Towersd GHN. Anti-Mycobacterial Screening of British Columbian Medicinal Plants. *Int J Pharmacog* 1997, 35: 77-83

Medicinal Plants and Natural Ingredients. International Trade Centre. Market Insider Quarterly Bulletin, Geneva 2015. Available

at: http://www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Market_Data_and_Information_on/Market_information/Market_Insider/Medicinal_plants/MI_Medicinal_Plants_2015_March.pdf.

Uploaded 10/11/2016

Mishra PK, Ram RB, Kumar N. Genetic variability, and genetic advance in strawberry (*Fragaria x ananassa* Duch.). *Turk J Agric For* 2015, 39:451-458

Moilanen J, KoskinenJuha-Pekka Salminen P. Distribution and content of ellagitannins in Finnish plant species. *Phytochem* 2015, 116:188-197

Mudnic I, Modun D, Brizic I, Vukovic J, Generalic I, Katalinic V, et al. Cardiovascular effects in vitro of aqueous extract of wild strawberry (*Fragaria vesca* L.) leaves. *Phytomed* 2009, 16:462-469

Najda A, Dyduch M. Chemical diversity within strawberry (*Fragaria vesca* L.) species. *Herba Polon* 2009a, 55(3):140-146

Najda A, Dyduch M. Contents and chemical composition of essential oils from wild strawberry (*Fragaria vesca* L.). *Herba Polon* 2009b, 55:153-162

Nedelcheva A, Pavlova D, Krasteva I, Nikolov S. Medicinal plants biodiversity and their resources of one serpentine site in the Rhodope Mts (Bulgaria). *Natura Montenegr* (Podgorica) 2010, 9:373-387

Neves JM, Matos C, Moutinho C, Queiroz G, Gomes LR. Ethnopharmacological notes about ancient uses of medicinal plants in Trás-os-Montes (northern of Portugal). *J Ethnopharmacol* 2009, 124(2):270-283

Newton SM, Lau C, Wright CW. A review of antimycobacterial natural products. *Phytother Res* 2000, 14(5):303-322

Oktyabrsky O, Vysochina G, Muzyka N, Samoilova Z, Kukushkina T, Smirnova G. Assessment of anti-oxidant activity of plant extracts using microbial test systems. *J Appl Microbiol* 2009, 106(4):1175-1183

Ożarowski A, Łaćucki J, Gąsiorowska K. Leki Roślinne. Informator. Zjednoczenie Przemysłu Zielarskiego Herbapol. Warszawa 1978, 122-123

Österreichisches Arzneibuch. Erdbeerblätter. *Fragariae folium*. *Amtliche Ausgabe* 2013, ÖAB 2013/076, pp. 281-4

Pawlaczyk I, Czerchawski L, Pilecki W, Lamer-Zarawska E, Gancarz R. Polyphenolic-polysaccharide compounds from selected medicinal plants of Asteraceae and Rosaceae families: Chemical characterization and blood anticoagulant activity. *Carbohydr Polym* 2009, 77; 568–775

Pawlaczyk I, Lewik-Tsirigotis M, Capek P, Matulová M, Sasinková V, Dąbrowski P. et al. Effects of extraction condition on structural features and anticoagulant activity of *F. vesca* L. conjugates. *Carbohydr Polym* 2013, 92(1):741-750

Pereira FA, Santos T, Pereira SG, Amaral MT, Cardoso O, Batista MT. Activity f strawberry (*Fragaria vesca*) leaf phenolic extracts on metallo-beta-lactamase VIM-2 producers *Pseudomonas aeruginosa*. *Clin Microbiol Infect* 2012, 18, Suppl.3: 755-756

Podlech D. Rośliny lecznicze (GU-Naturfürer Heilpflanzen). Muza SA., Warszawa 1997; 142

Popovic Z, Smiljanic M, Kostic M, Nijic P, Jankovic S. Wild flora and its usage in traditional phytotherapy (Deliblato Sands, Serbia, South East Europe). *Ind J Trad Knowledge* 2014, 13:9-35

Raudonis R, Raudone L, Jakstas V, Janulis V. Comparative evaluation of post-column free radical scavenging and ferric reducing antioxidant power assays for screening of antioxidants in strawberries. *J Chromatogr A* 2012, 1233:8-15

Rossoff IS. Encyclopedia of Clinical Toxicology. Strawberry. CRC Press, New York 2002, 1003

Rousseau-Gueutin M, Gaston A, Ainouche A, Ainouche ML, Olbricht K, Staudt G, et al. Tracking the evolutionary history of polyploidy in *Fragaria* L. (strawberry): new insights from phylogenetic analyses of low-copy nuclear genes. *Mol Phylogenet Evol* 2009, 51(3):515-530

Sargent DJ, Davis TM, Simpson DW. Strawberry (*Fragaria* spp.) Structural Genomics, In: Folta KM, Gardiner SE, editors. Genetics and Genomics of Rosaceae, Plant Genetics and Genomics: Crops and Models. Springer Science+Business Media, 2009

Savikin K, Zdunić G, Menković N, Zivković J, Cujić N, Tereščenko M, et al. Ethnobotanical study on traditional use of medicinal plants in South-Western Serbia, Zlatibor district. *J Ethnopharmacol* 2013, 146(3):803-810

Scheller B. Untersuchungen zur Identitätsprüfung und Gehaltsbestimmung von *Fragariae folium*. Thesis, Wien 2013

Schneider W. Pflanzliche Drogen. Sachwörterbuch zur Geschichte der pharmazeutischen Botanik Teil 2, D-0, Govi Verlag, Frankfurt 1974

Schönfelder I, Schönfelder P. Der neue Kosmos Heilpflanzenführer: Über 600 Heil- und Giftpflanzen Europas Taschenbuch. Franckh-Kosmos Verlag, 2004

Sillasoo U. Medieval plant depictions as a source for archaeobotanical research. *Veget Hist Archaeobot* 2006, 16:61–70

Skupień K, Oszmiański J, Kostrzewska-Nowak D, Tarasiuk J. In vitro antileukaemic activity of extracts from berry plant leaves against sensitive and multidrug resistant HL60 cells. *Cancer Lett* 2006, 236(2):282-291

Staudt G. Über Fragen der phylogenetischen Entwicklung einiger Arten der Gattung *Fragaria*. *Der Züchter* 1951, 21(7/8):222-232

Tunón H, Olavsdotter C, Bohlin L. Evaluation of anti-inflammatory activity of some Swedish medicinal plants. Inhibition of prostaglandin biosynthesis and PAF-induced exocytosis. *J Ethnopharmacol* 1995, 48(2):61-76

Tuttolomondo T, Licata M, Leto C, Gargano ML, Venturella G, La Bella S. Plant genetic resources and traditional knowledge on medicinal use of wild shrub and herbaceous plant species in the Etna Regional Park (Eastern Sicily, Italy). *J Ethnopharmacol* 2014, 155:1362-1381

Urzędowy Spis Leków 1963 r. Ministerstwo Zdrowia I Opieki Społecznej. Państwowy Zakład Wydawnictw Lekarskich. Warszawa 1962

Van Wyk B-E, Wink M. Medicinal plants of the world: an illustrated scientific guide to important medicinal plants and their uses. Timber Press, Portland 2004

Wagner H. Arzneidrogen und ihre Inhaltsstoffe. Pharmazeutische Biologie, Bd.2. Stuttgart 1999

Wichtl M, editor. Erdbeerblätter. Fragariae folium—(in) Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft mbH Stuttgart 1984, 109-10

Wichtl M, Bisset NG, editors. Fragariae folium—Wild strawberry leaf. In: Herbal Drugs and Phyto-pharmaceuticals. English translation by NG Bisset, CRC, Stuttgart 1994, 206-207

Wichtl M. Fragariae folium—Wild strawberry leaf. Herbal drugs and phytopharmaceuticals: A handbook for practice on a scientific basis. 3rd ed. CRC Press, Boca Raton 2004

Wilkes S, Glasl H. Isolation, characterization, and systematic significance of 2-pyrone-4,6-dicarboxylic acid in Rosaceae. *Phytochem* 2001, 58:441–449

Wren RC. Potter's New Cyclopaedia of Botanical Drugs and Preparations. Health Science Press, Saffron Walden 1975

Wurzer W, editor. Die grosse Enzyklopädie der Heilpflanzen: Ihre Anwendung und ihre natürliche Heilkraft Gebundene Ausgabe. Neuer Kaiser Verlag, Klagenfurt 1994

Yildirim AB, Turker AU. Effects of regeneration enhancers on micropropagation of *Fragaria vesca* L. and phenolic content comparison of field-grown and in vitro-grown plant materials by liquid chromatography-electrospray tandem mass spectrometry (LC–ESI–MS/MS). *Sci Horticult* 2014, 169:169–178

Zlatković B, Bogosavljević S, Radivojević A, Pavlović M. Traditional use of the native medicinal plant resource of Mt. Rtanj (Eastern Serbia): ethnobotanical evaluation and comparison. *J Ethnopharmacol* 2014, 151:704–713

Zlatković B, Bogosavljević S. Taxonomic and pharmacological valorization of the medicinal flora in Svrlijski Timok gorge (Eastern Serbia). *Fact Universit* 2014, 16:76–86

Zuidmeer L, Salentijn E, Rivas MF, Mancebo EG, Asero R, Matos CI, et al. The role of profilin and lipid transfer protein in strawberry allergy in the Mediterranean area. *Clin Exp Allergy* 2006, 36(5):666–675

Žugic A, Đordevic S, Arsic I, Markovic G, Živkovic J, Jovanovic S, et al. Antioxidant activity and phenolic compounds in 10 selected herbs from Vrujci Spa, Serbia. *Industr Crops Prod* 2014, 52:519–527

References used but not cited in the Assessment Report

Dias MI, Barros L, Oliveira MBPP, Santos-Buelga C, Ferreira ICFR. Individual phenolic profile and antioxidant activity of vegetative parts cultivated or wild growing *Fragaria vesca* L. *Planta Med* 2014, 80 – P2B26

EI-Mesallamy MHM, Hussein SAM, EI.Gerby M. Phenolic composition and biological activities of methanolic extract of strawberry leaves (*Fragaria ananassa*). *Nat Prod: An Indian J* 2013, 9(6):251–257

Frerichs G, Arend, G, Zörnig H, editors. Hagers Handbuch der Pharmazeutischen Praxis Für Apotheker, Arzneimittelhersteller Drogisten, Ärzte und Medizinalbeamte. Erster Band. *Fragaria*. Julius Springer Verlag, Berlin 1938, 1316–317

Frohne D. Heilpflanzenlexikon. Ein Leitfaden auf wissenschaftlicher Grundlage. *Fragaria vesca* L. Stuttgart, 2006 [Polish Translation]

Gobiec K, Konieczny Z. Receptariusz Zielarski. Folium Fragariae. Wydawnictwo Przemysłu Lekkiego i Spożywczego Herbapol, Warszawa 1963, pp. 133

Gruenwald J, Brendler T, Jaenicke C, editors. *PDR for Herbal Medicines* 4th ed. Strawberry. *Fragaria vesca*. Medical Economics Co., Inc., Montvale 2000

Hanhineva K, Kärenlampi SO, Aharoni A. Recent advances in strawberry metabolomics. In: Genes, Genomes and Genomics. Global Sciences Books, 2011:65-75. Available

at: [http://www.globalsciencebooks.info/Online/GSBOOnline/images/2011/GGG_5\(SI1\)/GGG_5\(SI1\)65-75o.pdf](http://www.globalsciencebooks.info/Online/GSBOOnline/images/2011/GGG_5(SI1)/GGG_5(SI1)65-75o.pdf)

Ivanov IG. Determination of biologically active substances with antioxidant potential in different extracts of *Fragaria vesca* L. leaves and flowers. *J Pharmacogn Phytochem* 2018; 7(5):2733-2737.

Liberal JMT. *Fragaria vesca* leaf as a source of bioactive phytochemicals : a focus on ellagitannins and their human microflora metabolites. Doctorate Thesis, Coimbra 2016, 221 pp. Available at: <https://estudogeral.sib.uc.pt/handle/10316/30182>

Mazzio EA, Soliman KF. *In vitro* screening for the tumoricidal properties of international medicinal herbs. *Phytother Res* 2009, 23(3):385-398

Muszyński J. Herba Fragariae (Poziomka). Ziołolecznictwo I Leki Roślinne (Fytoterapia). Polska Agencja Wydawnicza, Łódź, 1946, 158

Oszmiański J, Wojdyło A, Gorzelany J, Kapusta I. Identification and characterization of low molecular weight polyphenols in berry leaf extracts by HPLC-DAD and LC-ESI/MS. *Agric Food Chem* 2011, 59:12830-12835

Ożarowski A. editor. Ziołolecznictwo. Poradnik dla lekarzy. Państwowy Zakład Wydawnictw Lekarskich, Warszawa 1976, pp. 109-11

Ożarowski A, Jaroniewski W. *Fragaria vesca* L. In: Rośliny Lecznicze. Publishing Institute of Trade Unions, Warsaw 1987, 309-311

Rácz G, Rácz-Kotilla E, Laza A. Gyógynövényismeret. *Fragaria vesca* L. Ceres Könyvkiado, Bukarest 1984, 157

Tassa BD, Gogoi G, Das S. A comparative of the hypolipidaemic and antioxidant activities of ethanolic extracts of leaves of *Phlogacanthus thrysiflorus*, *Oxalis corniculata* L. and *Fragaria vesca* in albino rats. *Asian J Pharmac Biol Res* 2012, 2:12-18

Turova A.D., Sapoznikova E.N. *Fragaria vesca* L. (in) Лекарственные, растения СССР и их применение. Медицина, Moskwa 1984, 244-245

Van Wyk B-E, Wink M. *Fragaria vesca*. In: Phytomedicines, Herbal Drugs. The University of Chicago Press, Chicago, London 2014

Watson RR, Preedy VR. *Fragaria vesca* (Wild Strawberry). In: Botanical Medicine in Clinical Practice. CABI International, Cambridge 2008, 425

Wiorogórski W, Zajączkowski W. Leaves of Strawberry, of common wild straw berry. In: Lexicon synonymorum pharmaceuticorum in linguis: Latina, Germanica, Gallica, Anglicana, Polonica et Rossica *The Pharmaceutical Society of Warsaw*, Warszawa 1892–1918, p. 569

Zanetti-Ripamonti G. Piante Medicinali Nostre. Fragola (*Fragaria vesca* L.). Istituto Editoriale Ticinese, Lugano-Belinzona 1940, pp. 70-71