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THE VASCULAR FLORA OF THE RAILWAY GROUNDS OF THE PABIANICE TOWN

Abstract: In the paper a list and general characterization of vascular plants recorded on railway grounds of the town of Pabianice is presented. The great diversity of habitats within the railway grounds as well as their inclination to be colonized by numerous introduced species resulted in high variety of vascular plants there. This flora consists of 382 taxa.

Key words: flora, vascular plants, railway grounds, Pabianice, Central Poland.

1. INTRODUCTION

The vascular plants of the railway grounds of the town of Pabianice have not yet been the subject of complex research (see SOWA 1991). Fairly abundant data on vascular plant occurrence on the railway grounds of this town is given by MOWSZOWICZ (1960, 1978), and SOWA (1971). The floristic investigation that was carried out on the railway grounds of Pabianice in 2005 and 2006, enriched the list of taxa of this type of flora (WARCHOLIŃSKA, SUWARA-SZMIGIELSKA 2006).

The main aim of the floristic research carried out in 2005 and 2006 was compiling an updated list of vascular plants occurring in diverse habitats of

Pabianice railway grounds and working out a general characterization of the investigated flora.

2. MATERIALS AND METHODS

The present study encompassed the railway areas within the administrative borders of the Pabianice Town. The total length of railway tracks located in these areas is 5.3 km (Fig. 1). The areas are terrain between the rails and 10 meter wide belts adjoining the railways tracks on both sides, including those tracks that are situated on embankments.

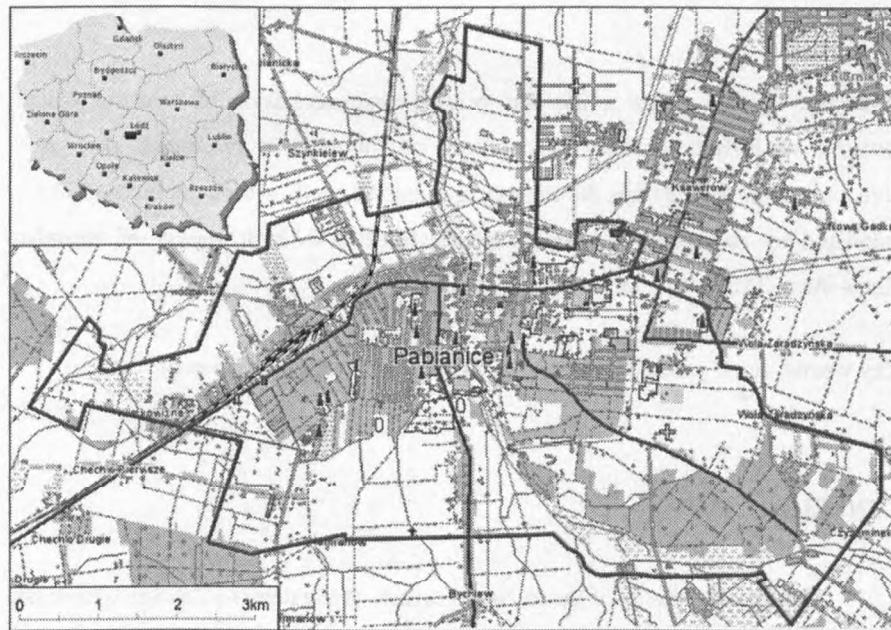


Fig. 1: Location of the study area (dashed line)

On the basis of data analysis a systematic list of taxa occurring in the investigated flora of Pabianice railway grounds was compiled and its general characterization was carried out.

The systematic arrangement of taxa was accepted after SZAFER *et al.* (1976), while the botanic nomenclature after MIREK *et al.* (2002). Studies by JACKOWIAK (1990), JANOWSKA (2002), LATOWSKI (1981, 2004), MOWSZOWICZ (1975), RUTKOWSKI (1998), WARCHOLIŃSKA (2004, 2005), were also employed.

Before and after the Latin names of taxa the following data were given:

- * - Plants recorded in 2005 and 2006;
- Life span of species (Shl – Short living plants, Per – Perennial plants);
- Life form (M – Megaphanerophytes, N- Nanophanerophytes, Ch – Woody chamaephytes, C – Herbaceous chamaephytes, G – Geophytes, H – Hemicryptophytes, T – Therophytes);
- Geographic-historical group (Ap – Apophytes; Anthropophytes: Ar – Archaeophytes, Ep – Epocophytes, He – Hemiagriophytes, Ho – Holoagriophytes, Ef – Ephemerophytes, Er – Ergaziophygophytes);
- Frequency classes (very rare, rare, rather frequent, frequent, common).

The following studies were employed to characterize the vascular plants of the area: JACKOWIAK (1990), JANOWSKA (2002), KORNAŚ *et al.* (1959), KORNAŚ (1968), LATOWSKI (1981, 2004), MIREK *et al.* (2002), SZAFER *et al.* (1976), WARCHOLIŃSKA (2004, 2005), ZAJĄC E. U., ZAJĄC A. (1975), ZARZYCKI *et al.* (2002).

3. RESULTS

3.1. List of taxa

Polypodiaceae

- * 1. *Dryopteris filix-mas* (L.) Schott – Per, H, Ap, very rare.
- * 2. *Pteridium aquilinum* (L.) Kuhn – Per, G, Ap, rare.

Equisetaceae

- 3. *Equisetum arvense* L. – Per, G, Ap, common.
- * 4. *E. sylvaticum* L. – Per, G, Ap, rare.
- * 5. *E. palustre* L. – Per, G, Ap, very rare.

Pinaceae

6. *Pinus sylvestris* L. – Per, M, Ap, rare.

Cupressaceae

- * 7. *Juniperus communis* L. – Per, N, Ap, rare.

Betulaceae

- * 8. *Betula pendula* Roth – Per, M, Ap, frequent.
* 9. *Alnus glutinosa* (L.) Gaertn. – Per, M, Ap, very rare.
* 10. *Carpinus betulus* L. – Per, M, Ap, very rare.
* 11. *Corylus avellana* L. – Per, N, Ap, rare.

Fagaceae

- * 12. *Quercus robur* L. – Per, M, Ap, rare.
* 13. *Q. rubra* L. – Per, M, He, rare.

Salicaceae

- * 14. *Populus alba* L. – Per, M, Ap, rare.
* 15. *P. tremula* L. – Per, M, Ap, rather frequent.
* 16. *Salix fragilis* L. – Per, M, Ap, very rare.
* 17. *S. alba* L. – Per, N, Ap, very rare.
* 18. *S. cinerea* L. – Per, N, Ap, very rare.
* 19. *S. caprea* L. – Per, N, Ap, rare.

Moraceae

- * 20. *Morus alba* L. – Per, M, Er, rare.

Cannabaceae

- * 21. *Humulus lupulus* L. – Per, N, Ap, very rare.

Urticaceae

- * 22. *Urtica urens* L. – Shl, T, Ar, frequent.
* 23. *Urtica dioica* L. – Per, H, Ap, rather frequent.

Polygonaceae

- * 24. *Rumex maritimus* L. – Shl, T, Ap, very rare.
* 25. *R. conglomeratus* Murray – Per, H, Ap, very rare.
* 26. *R. obtusifolius* L. – Per, H, Ap, rather frequent.
27. *R. crispus* L. – Per, H, Ap, frequent.

28. *R. acetosa* L. – Per, H, Ap, rather frequent.
29. *R. acetosella* L. – Per, G, Ap, frequent.
* 30. *Polygonum bistorta* L. – Per, G, Ap, very rare.
* 31. *P. amphibium* L. – Per, G, Ap, very rare.
32. *P. persicaria* L. – Shl, T, Ap, common.
33. *P. lapathifolium* L. subsp. *pallidum* (With.) Fr. – Shl, T, Ap, frequent.
34. *P. lapathifolium* L. – Shl, T, Ap, rare.
* 35. *P. hydropiper* L. – Shl, T, Ap, very rare.
* 36. *P. minus* L. – Shl, T, Ap, very rare.
37. *P. aviculare* L. – Shl, T, Ap, common.
* 38. *Reynoutria sachalinensis* (F. Schmidt) Nakai – Per, G, Ep, very rare.
* 39. *R. japonica* Houtt. – Per, G, Ep, rare.
40. *Fallopia convolvulus* (L.) Á. Löve – Shl, T, Ar, common.
* 41. *F. dumetorum* (L.) Holub – Shl, T, Ap, very rare.

Chenopodiaceae

- * 42. *Corispermum hyssopifolium* L. – Shl, T, Ep, very rare.
* 43. *Kochia scoparia* (L.) Schrad. – Shl, T, Ef, very rare.
* 44. *Chenopodium polyspermum* L. – Shl, T, Ap, very rare.
45. *Ch. opulifolium* Schrad. Ex W.D.J. Koch & Ziz – Shl, T, Ar, very rare.
46. *Ch. album* L. – Shl, T, Ap, common.
47. *Ch. glaucum* L. – Shl, T, Ap, very rare.
* 48. *Artiplex hortensis* L. – Shl, T, Ep, very rare.
49. *A. patula* L. – Shl, T, Ap, frequent.
50. *A. prostrata* Boucher Ex DC. – Shl, T, Ap, very rare.
* 51. *Salsola kali* L. subsp. *ruthenica* (Iljin) Soó – Shl, T, Ep, very rare.

Amaranthaceae

52. *Amaranthus retroflexus* L. – Shl, T, Ep, frequent.
53. *A. albus* L. – Shl, T, Ep, rare.
* 54. *A. blitoides* S. Watson – Shl, T, Ep, very rare.
* 55. *A. lividus* L. – Shl, T, Ep, rare.

Caryophyllaceae

56. *Dianthus deltoides* L. – Per, H, Ap, rare.
- * 57. *Gypsophila muralis* L. – Shl, T, Ap, rather frequent.
58. *Saponaria officinalis* L. – Per, H, Ap, rather frequent.
59. *Melandrium album* (Mill.) Garcke – Shl, H, Ap, frequent.
60. *Silene vulgaris* (Moench) Garcke – Per, H, Ap, rather frequent.
- * 61. *Arenaria serpyllifolia* L. – Shl, T, Ap, rather frequent.
62. *Stellaria media* (L.) Vill. – Shl, T, Ap, rather frequent.
63. *S. graminea* L. – Per, H, Ap, rather frequent.
64. *Cerastium arvense* L. S. S. – Per, C, Ap, frequent.
65. *C. holosteoides* Fr. Emend. Hyl. – Per, C, Ap, frequent.
66. *Scleranthus perennis* L. – Per, H, Ap, rather frequent.
67. *S. annuus* L. – Shl, T, Ar, frequent.
68. *Spergula arvensis* L. – Shl, T, Ar, frequent.
- * 69. *S. morisonii* Boreau – Shl, T, Ap, rare.
70. *Spergularia rubra* (L.) J. Presl & C. Presl – Shl, H, Ap, rather frequent.
71. *Herniaria glabra* L. – Shl, H, Ap, rather frequent.
- * 72. *H. hirsuta* L. – Shl, T, Ar, very rare.

Euphorbiaceae

73. *Euphorbia peplus* L. – Shl, T, Ar, rare.
74. *E. helioscopia* L. – Shl, T, Ar, rather frequent.
75. *E. cyparissias* L. – Per, H, Ap, frequent.
76. *E. esula* L. – Per, H, Ap, rare.

Ranunculaceae

77. *Consolida regalis* S. F. Gray – Shl, T, Ar, very rare.
- * 78. *C. ajacis* (L.) Shur – Shl, T, Er, very rare.
- * 79. *Ranunculus bulbosus* L. – Per, G, Ap, rare.
80. *R. repens* L. – Per, H, Ap, rather frequent.
81. *R. acris* L. S. S. – Per, H, Ap, frequent.

Papaveraceae

- * 82. *Papaver argemone* L. – Shl, T, Ar, rare.

83. *P. dubium* L. – Shl, T, Ar, rather frequent.
84. *P. rhoeas* L. – Shl, T, Ar, rare.
* 85. *P. somniferum* L. – Shl, T, Er, very rare.
86. *Chelidonium majus* L. – Per, H, Ap, rather frequent.
87. *Fumaria officinalis* L. – Shl, T, Ar, very rare.

Brassicaceae

- * 88. *Rorippa sylvestris* (L.) Besser – Per, H, Ap, rather frequent.
89. *R. austriaca* (Crantz) Besser – Per, H, Ap, rare.
90. *Cardaminopsis arenosa* (L.) Hayek – Shl, H, Ap, rare.
91. *Sisymbrium officinale* (L.) Scop. – Shl, T, Ar, frequent.
92. *S. altissimum* L. – Shl, H, Ep, rather frequent.
93. *S. loeselii* L. – Shl, T, Ep, frequent.
94. *Descurainia sophia* (L.) Webb ex Prantl – Shl, T, Ar, common.
95. *Arabidopsis thaliana* (L.) Heynh. – Shl, T, Ap, frequent.
96. *Erysimum cheiranthoides* L. – Shl, T, Ar, rather frequent.
* 97. *Brassica napus* L. – Shl, T, Er, very rare.
98. *Erucastrum gallicum* (Willd.) O. E. Schulz – Shl, T, Ep, very rare.
* 99. *Sinapis arvensis* L. – Shl, T, Ar, rather frequent.
* 100. *S. alba* L. – Shl, T, Er, rare.
101. *Diploaxis muralis* (L.) DC. – Shl, T, Ep, rare.
102. *Alyssum alyssoides* (L.) L. – Shl, T, Ap, very rare.
103. *Berteroa incana* (L.) DC. – Shl, T, Ap, common.
104. *Erophila verna* (L.) Chevall. – Shl, T, Ap, frequent.
* 105. *Armoracia rusticana* P. Gaertn., B. Mey. & Scherb. – Per, G, Ar, rare.
106. *Thlaspi arvense* L. – Shl, T, Ar, rare.
107. *Cardaria draba* (L.) Desv. – Per, H, Ep, rare.
108. *Lepidium campestre* (L.) R. Br. – Shl, T, Ar, very rare.
109. *L. sativum* L. – Shl, T, Er, very rare.
110. *L. ruderale* L. – Shl, T, Ar, frequent.
111. *L. densiflorum* Schrad. – Shl, T, Ep, very rare.
112. *Capsella bursa-pastoris* (L.) Medik. – Shl, T, Ar, common.

113. *Bunias orientalis* L. – Shl, T, Ep, very rare.

114. *Raphanus raphanistrum* L. – Shl, T, Ar, frequent.

* 115. *R. sativus* L. – Shl, T, Er, rather frequent.

Resedaceae

116. *Reseda lutea* L. – Shl, T, Ap, very rare.

Violaceae

* 117. *Viola odorata* L. – Per, H, Ap, rare.

* 118. *V. tricolor* L. S. S. – Shl, T, Ap, rather frequent.

119. *V. arvensis* Murray – Shl, T, Ar, rather frequent.

Clusiaceae

120. *Hypericum perforatum* L. – Per, H, Ap, rather frequent.

Crassulaceae

* 121. *Sedum maximum* (L.) Hoffm. – Per, G, Ap, very rare.

122. *S. acre* L. – Per, C, Ap, rather frequent.

Saxifragaceae

* 123. *Saxifraga granulata* L. – Per, H, Ap, rare.

Rosaceae

* 124. *Spiraea salicifolia* L. – Per, N, Er, very rare.

* 125. *Rosa rugosa* Thunb. – Per, N, Ar, very rare.

* 126. *R. canina* L. – Per, N, Ap, rather frequent.

* 127. *Rubus idaeus* L. – Per, N, Ap, rather frequent.

* 128. *R. caesius* L. – Per, N, Ap, frequent.

* 129. *Fragaria vesca* L. – Per, H, Ap, very rare.

* 130. *Potentilla argentea* L. S. S. – Per, H, Ap, very frequent.

131. *P. argentea* L. – Per, H, Ap, rather frequent.

132. *P. reptans* L. – Per, H, Ap, very rare.

* 133. *P. erecta* (L.) Raeusch – Per, H, Ap, very rare.

134. *P. anserina* L. – Per, H, Ap, frequent.

* 135. *Alchemilla monticola* Opiz – Per, H, Ap, very rare.

136. *Geum urbanum* L. – Per, H, Ap, rather frequent.

137. *Agrimonia eupatoria* L. – Per, H, Ap, very rare.

- * 138. *Crataegus monogyna* Jacq. – Per, N, Ap, very rare.
- * 139. *Pyrus communis* L. – Per, M, Ar, very rare.
- * 140. *Sorbus aucuparia* L. Emend. Hedl. – Per, M, Ap, very rare.
- * 141. *Prunus spinosa* L. – Per, N, Ap, very rare.
- * 142. *P. domestica* L. subsp. *insititia* (L.) Bonnier & Layens – Per, N, Er, very rare.
- * 143. *Padus serotina* (Ehrh.) Borkh. – Per, N, Ep, rare.

Fabaceae

- * 144. *Sarothamnus scoparius* (L.) W. D. J. Koch – Per, N, Ap, rare.
- * 145. *Lupinus polyphyllus* Lindl. – Per, H, He, very rare.
- 146. *Ononis arvensis* L. – Per, H, Ap, rare.
- * 147. *Medicago falcata* L. – Per, H, Ap, very rare.
- 148. *M. sativa* L. – Per, H, Er, rather frequent.
- 149. *M. lupulina* L. – Shl, T, Ap, frequent.
- 150. *Melilotus alba* Medik. – Shl, H, Ap, frequent.
- 151. *M. officinalis* (L.) Pall. – Shl, H, Ap, rather frequent.
- 152. *Trifolium arvense* L. – Shl, T, Ap, rather frequent.
- * 153. *T. dubium* Sibth. – Shl, T, Ap, rare.
- 154. *T. campestre* Schreb. – Shl, T, Ap, rather frequent.
- 155. *T. fragiferum* L. – Per, H, Ap, very rare.
- 156. *T. repens* L. – Per, H, Ap, frequent.
- * 157. *T. pratense* L. – Per, H, Ap, very rare.
- * 158. *T. medium* L. – Per, H, Ap, rare.
- * 159. *Lotus uliginosus* Schkuhr – Per, H, Ap, rare.
- 160. *L. corniculatus* L. – Per, H, Ap, frequent.
- * 161. *Robinia pseudacacia* L. – Per, M, He, rather frequent.
- * 162. *Caragana arborescens* Lam. – Per, N, Er, very rate.
- * 163. *Astragalus glycyphyllos* L. – Per, H, Ap, very rare.
- 164. *Coronilla varia* L. – Per, H, Ap, frequent.
- 165. *Vicia hirsuta* (L.) S. F. Gray – Shl, T, Ar, frequent.
- 166. *V. tetrasperma* (L.) Schreb. – Shl, T, Ar, rather frequent.

167. *V. cracca* L. – Per, H, Ap, frequent.
168. *V. villosa* Roth. – Shl, T, Ar, rather frequent.
* 169. *V. sepium* L. – Per, H, Ap, rare.
* 170. *V. sativa* L. – Shl, T, Ar, very rare.
* 171. *V. angustifolia* L. – Shl, T, Ar, frequent.
* 172. *Lathyrus pratensis* L. – Per, H, Ap, rare.
* 173. *Pisum sativum* L. – Shl, T, Er, very rare.

Lythraceae

- * 174. *Lythrum salicaria* L. – Per, H, Ap, rare.

Onagraceae

175. *Epilobium hirsutum* L. – Per, H, Ap, very rare.
* 176. *E. parviflorum* Schreb. – Per, H, Ap, rather frequent.
* 177. *Chamaenerion angustifolium* (L.) Scop. – Per, H, Ap, rare.
178. *Oenothera biennis* L. S. S. – Shl, H, Ap, frequent.

Malvaceae

- * 179. *Alcea rosea* L. – Per., H, Er, very rare.
* 180. *Malva sylvestris* L. – Shl, H, Ar, rare.
* 181. *M. neglecta* Wallr. – Shl, H, Ar, frequent.

Tiliaceae

- * 182. *Tilia cordata* Mill. – Per, M, Ap, very rare.

Oxalidaceae

- * 183. *Oxalis fontana* Bunge – Per, G, Ep, rather frequent.

Geraniaceae

- * 184. *Geranium pratense* L. – Per, H, Ap, rare.
185. *G. pusillum* Burm. F. ex L. – Shl, T, Ar, frequent.
* 186. *G. robertianum* L. – Shl, H, Ap, rare.
187. *Erodium cicutarium* (L.) L'Hér. – Shl, T, Ap, common.

Aceraceae

- * 188. *Acer pseudoplatanus* L. – Per, M, Ap, very rare.
* 189. *A. platanoides* L. – Per, M, Ap, rather frequent.
* 190. *A. campestre* L. – Per, M, Ap, very rare.

- * 191. *A. negundo* L. - Per, M, He, rather frequent.

Hippocastanaceae

- * 192. *Aesculus hippocastanum* L. - Per, M, Er, rare.

Balsaminaceae

- * 193. *Impatiens parviflora* DC. - Shl, T, Ho, rare.

Vitaceae

- * 194. *Parthenocissus quinquefolia* (L.) Planch. in A. & C. DC. - Per, N, Er, rare.

Araliaceae

- * 195. *Hedera helix* L. - Per, N, Ap, rare.

Apiaceae

- * 196. *Sium latifolium* L. - Per, H, Ap, very rare.

197. *Carum carvi* L. - Shl, H, Ap, rather frequent.

- * 198. *Aegopodium podagraria* L. - Per, H, Ap, rather frequent.

199. *Pimpinella saxifraga* L. - Per, H, Ap, frequent.

- * 200. *Aethusa cynapium* L. - Shl, T, Ar, rare.

201. *Heracleum sibiricum* L. - Per, H, Ap, frequent.

- * 202. *H. sphondylium* L. - Per, H, Ap, rare.

- * 203. *Peucedanum oreoselinum* (L.) Moench - Per, H, Ap, rare.

204. *Pastinaca sativa* L. - Shl, H, Ap, frequent.

205. *Daucus carota* L. - Shl, H, Ap, rather frequent.

- * 206. *Anthriscus sylvestris* (L.) Hoffm. - Per, H, Ap, rare.

- * 207. *Torilis japonica* (Houtt.) DC. - Shl, T, Ap, rather frequent.

Primulaceae

208. *Anagalis arvensis* L. - Shl, T, Ar, very rare.

- * 209. *Lysimachia vulgaris* L. - Per, H, Ap, rare.

Convolvulaceae

210. *Convolvulus arvensis* L. - Per, G, Ar, common.

- * 211. *Calystegia sepium* (L.) R. Br. - Per, G, Ap, very rare.

Boraginaceae

212. *Anchusa officinalis* L. - Shl, H, Ap, rare.

213. *A. arvensis* (L.) M. Bieb. - Shl, T, Ar, rare.

- * 214. *Symphytum officinale* L. – Per, H, Ap, very rare.
- 215. *Echium vulgare* L. – Shl, H, Ap, rather frequent.
- 216. *Lithospermum arvense* L. – Shl, T, Ar, rather frequent.
- 217. *Myosotis stricta* Link ex Roem. & Schult. – Shl, T, Ap, rather frequent.
- 218. *M. arvensis* (L.) Hill – Shl, T, Ar, rare.

Solanaceae

- 219. *Hyoscyamus niger* L. – Shl, T, Ar, very rare.
- 220. *Solanum nigrum* L. Emend. Mill. – Shl, T, Ar, very rare.
- 221. *S. tuberosum* L. – Per, G, Er, very rare.
- * 222. *Datura stramonium* L. – Shl, T, Ep, very rare.
- * 223. *Nicotiana rustica* L. – Shl, T, Er, very rare.

Scrophulariaceae

- 224. *Verbascum thapsus* L. – Shl, H, Ap, very rare.
- * 225. *V. densiflorum* Bertol. – Shl, H, Ap, very rare.
- * 226. *V. nigrum* L. – Shl, H, Ap, frequent.
- * 227. *Linaria vulgaris* Mill. – Per, G, Ap, frequent.
- 228. *Chaenorhinum minus* (L.) Lange – Shl, T, Ap, very rare.
- 229. *Scrophularia nodosa* L. – Per, G, Ap, very rare.
- 230. *Veronica chamaedrys* L. – Per, C, Ap, frequent.
- * 231. *V. serpyllifolia* L. – Per, H, Ap, rare.
- * 232. *V. arvensis* L. – Shl, T, Ar, rather frequent.
- * 233. *V. verna* L. – Shl, T, Ap, very rare.
- * 234. *V. dillenii* Crantz – Shl, T, Ap, very rare.
- 235. *V. persica* Poir. – Shl, T, Ep, rare.
- * 236. *Euphrasia rostkoviana* Hayne – Shl, T, Ap, very rare.
- 237. *Odontites serotina* (Lam.) Rchb. – Shl, T, Ap, rare.
- * 238. *O. verna* (Bellardi) Dumort. – Shl, T, Ap, rare.

Lamiaceae

- * 239. *Glechoma hederacea* L. – Per, H, Ap, rare.
- 240. *Prunella vulgaris* L. – Per, H, Ap, rare.
- 241. *Galeopsis angustifolia* (Ehrh.) Hoffm. – Shl, T, Ar, very rare.

- * 242. *G. tetrahit* L. – Shl, T, Ap, rather frequent.
- * 243. *G. bifida* Boenn. – Shl, T, Ap, frequent.
- * 244. *G. pubescens* Besser – Shl, T, Ap, very rare.
- 245. *Lamium purpureum* L. – Shl, H, Ar, frequent.
- 246. *L. amplexicaule* L. – Shl, H, Ar, rare.
- * 247. *Stachys palustris* L. – Per, G, Ap, rare.
- 248. *Leonurus cardiaca* L. – Per, H, Ar, rare.
- 249. *Ballota nigra* L. – Per, H, Ar, rare.
- * 250. *Acinos arvensis* (Lam.) Dandy – Shl, T, Ap, rather frequent.
- * 251. *Origanum vulgare* L. – Per, G, Ap, very rare.
- * 252. *Thymus pulegioides* L. – Per, C, Ap, rare.
- 253. *T. serpyllum* L. Emend. Fr. – Per, C, Ap, rather frequent.
- * 254. *Lycopus europaeus* L. – Per, G, Ap, rare.
- * 255. *Mentha arvensis* L. – Per, G, Ap, frequent.

Plantaginaceae

- 256. *Plantago major* L. – Per, H, Ap, frequent.
- 257. *P. media* L. – Per, H, Ap, very rare.
- 258. *P. lanceolata* L. – Per, H, Ap, frequent.
- 259. *P. arenaria* Waldst. & Kit. – Shl, T, Ap, rare.

Oleaceae

- * 260. *Fraxinus excelsior* L. – Per, M, Ap, very rare.
- * 261. *Syringa vulgaris* L. – Per, N, Er, very rare.
- * 262. *Ligustrum vulgare* L. – Per, N, Er, very rare.

Rubiaceae

- 263. *Galium verum* L. S. S. – Per, H, Ap, rather frequent.
- 264. *G. mollugo* L. – Per, H, Ap, frequent.
- 265. *G. tricorneratum* Dandy – Per, G, Ap, very rare.

Caprifoliaceae

- * 266. *Sambucus nigra* L. – Per, N, Ap, rare.
- * 267. *Viburnum opulus* L. – Per, N, Ap, very rare.
- * 268. *Symphoricarpos albus* (L.) S. F. Blake – Per, N, Er, rather frequent.

Dipsacaceae

- * 269. *Scabiosa ochroleuca* L. – Per, H, Ap, very rare.
- 270. *Knautia arvensis* (L.) J. M. Coult. – Per, H, Ap, rather frequent.

Cucurbitaceae

- * 271. *Echinocystis lobata* (F. Michx.) Torr. & a. Gray – Shl, T, Ef, very rare.

Campanulaceae

- 272. *Jasione montana* L. – Shl, H, Ap, rare.
- * 273. *Campanula rapunculoides* L. – Per, G, Ap, very rare.
- * 274. *C. patula* L. – Per, H, Ap, rare.

Asteraceae

- * 275. *Solidago canadensis* L. – Per, H, He, frequent.
- * 276. *S. gigantea* Aiton – Per, H, He, rather frequent.
- * 277. *Bellis perennis* L. – Per, H, Ap, very rare.
- 278. *Conyza canadensis* (L.) Cronquist – Shl, T, Ep, common.
- 279. *Erigeron acris* L. – Shl, H, Ap, rare.
- 280. *E. annuus* (L.) Pers. – Per, H, He, rare.
- * 281. *Gnaphalium uliginosum* L. – Shl, T, Ap, rare.
- 282. *Xanthium strumarium* L. – Shl, T, Ap, rare.
- 283. *Helianthus annuus* L. – Shl, T, Er, very rare.
- * 284. *Rudbeckia laciniata* L. – Per, H, Ep, very rare.
- 285. *Bidens tripartita* L. – Shl, T, Ap, rare.
- 286. *Galinsoga parviflora* Cav. – Shl, T, Ep, frequent.
- 287. *G. ciliata* (Raf.) S. F. Blake – Shl, T, Ep, rare.
- * 288. *Anthemis arvensis* L. – Shl, T, Ar, frequent.
- 289. *A. ruthenica* M. Bieb. – Shl, T, Ar, very rare.
- * 290. *A. cotula* L. – Shl, T, Ar, rare.
- * 291. *Achillea ptarmica* L. – Per, H, Ap, very rare.
- 292. *A. millefolium* L. – Per, H, Ap, common.
- 293. *Chamomilla recutita* (L.) Rauschert – Shl, T, Ar, rare.
- 294. *Ch. suaveolens* (Pursh) Rydb. – Shl, T, Ep, frequent.
- 295. *Matricaria maritima* L. – Shl, T, Ar, rather frequent.

- * 296. *Laucanthemum vulgare* Lam. S. S. – Per, H, Ap, rare.
- * 297. *Tanacetum parthenium* (L.) Schultz-Bip. – Per, H, Er, very rare.
- 298. *T. vulgare* L. – Per, H, Ap, frequent.
- 299. *Artemisia absinthium* L. – Per, Ch, Ap, rare.
- 300. *A. vulgaris* L. – Per, H, Ap, rather frequent.
- 301. *A. austriaca* Jacq. – Per, Ch, Ep, very rare.
- 302. *A. campestris* L. – Per, Ch, Ap, rather frequent.
- 303. *Tussilago farfara* L. – Per, G, Ap, rare.
- 304. *Senecio vulgaris* L. – Shl, T, Ar, frequent.
- 305. *S. viscosus* L. – Shl, T, Ap, rather frequent.
- * 306. *S. vernalis* Waldst. & Kit. – Shl, T, Ep, rather frequent.
- * 307. *S. jacobaea* L. – Per, H, Ap, frequent.
- * 308. *Calendula officinalis* L. – Shl, T, Er, very rare.
- 309. *Arctium tomentosum* Mill. – Shl, H, Ap, frequent.
- 310. *A. lappa* L. – Shl, H, Ap, frequent.
- 311. *A. minus* (Hill) Bernh. – Shl, H, Ap, rare.
- 312. *Carduus acanthoides* L. – Shl, H, Ar, very rare.
- 313. *Cirsium vulgare* (Savi) Ten. – Shl, H, Ap, rare.
- 314. *C. arvense* (L.) Scop. – Per, G, Ap, common.
- * 315. *Onopordum acanthium* L. – Shl, H, Ar, very rare.
- 316. *Centaurea scabiosa* L. – Per, H, Ap, rare.
- 317. *C. stoebe* L. – Shl, H, Ap, frequent.
- * 318. *C. diffusa* Lam. – Per, H, Ep, very rare.
- 319. *C. cyanus* L. – Shl, T, Ar, very rare.
- 320. *C. jacea* L. – Per, H, Ap, rare.
- 321. *Cichorium intybus* L. – Per, H, Ar, rather frequent.
- 322. *Lapsana communis* L. – Shl, T, Ap, rare.
- * 323. *Hypochoeris radicata* L. – Per, H, Ap, rare.
- * 324. *H. glabra* L. – Shl, T, Ap, rather frequent.
- * 325. *Tragopogon pratensis* L. S. S. – Shl, H, Ap, rare.
- 326. *T. dubius* Scop. – Shl, H, Ap, very rare.

327. *Leontodon autumnalis* L. – Per, H, Ap, frequent.
- * 328. *L. hispidus* L. – Per H, Ap, rare.
329. *Taraxacum officinale* F. H. Wigg. – Per, H, Ap, common.
330. *Sonchus oleraceus* L. – Shl, T, Ar, rare.
331. *S. asper* (L.) Hill – Shl, T, Ar, rare.
332. *S. arvensis* L. – Per, G, Ap, common.
333. *Lactuca serriola* L. – Shl, H, Ar, rare.
- * 334. *Crepis biennis* L. – Shl, H, Ap, rare.
- * 335. *C. tectorum* L. – Shl, T, Ap, rather frequent.
336. *Hieracium pilosella* L. – Per, H, Ap, frequent.

Liliaceae

- * 337. *Allium vineale* L. – Per, H, Ap, rare.

Juncaceae

338. *Juncus bufonius* L. – Shl, T, Ap, rare.
- * 339. *J. conglomeratus* L. Emend. Leers – Per, H, Ap, rare.
- * 340. *Luzula campestris* (L.) DC. – Per, H, Ap, rare.

Cyperaceae

- * 341. *Carex hirta* L. – Per, G, Ap, rather frequent.

Poaceae

342. *Digitaria sanguinalis* (L.) Scop. – Shl, T, Ar, very rare.
343. *D. ischaemum* (Schreb.) H. L. Mühl. – Shl, T, Ar, rather frequent.
344. *Echinochloa crus-galli* (L.) P. Beauv. – Shl, T, Ar, rare
- * 345. *Setaria pumila* (Poir.) Roem. & Schult. – Shl, T, Ar, rather frequent.
346. *S. viridis* (L.) P. Beauv. – Shl, T, Ar, rather frequent.
- * 347. *Anthoxanthum odoratum* L. – Per, H, Ap, rather frequent.
- * 348. *A. aristatum* Boiss. – Shl, T, Er, very rare.
349. *Phleum pratense* L. – Per, H, Ar, frequent.
- * 350. *Alopecurus pratensis* L. – Per, H, Ap, rare.
351. *Apera spica-venti* (L.) P. Beauv. – Shl, T, Ar, rare.
352. *Agrostis stolonifera* L. – Per, H, Ap, frequent.
353. *A. capillaris* L. – Per, H, Ap, rare.

354. *Calamagrostis epigejos* (L.) Roth – Per, G, Ap, rare.
- * 355. *Holcus mollis* L. – Per, H, Ap, rather frequent.
356. *H. lanatus* L. – Per, H, Ap, rare.
357. *Corynephorus canescens* (L.) Roth – Per, G, Ap, rare.
- * 358. *Avena sativa* L. – Shl, T, Er, very rare.
- * 359. *Arrhenatherum elatius* (L.) P. Beauv. Ex J. Presl & C. Presl – Per, H, Ap, rare.
- * 360. *Phragmites australis* (Cav.) Trin. Ex Steud. – Per, G, Ap, rare.
361. *Eragrostis minor* Host – Shl, T, Ep, very rare.
362. *Cynosurus cristatus* L. – Per, H, Ap, very rare.
363. *Dactylis glomerata* L. – Per, H, Ap, rather frequent.
364. *Poa annua* L. – Shl, T, Ap, frequent.
365. *P. palustris* L. – Per, H, Ap, rare.
366. *P. compressa* L. – Per, G, Ap, rare.
- * 367. *P. trivialis* L. – Per, H, Ap, rather frequent.
368. *Puccinellia distans* (Jacq.) Parl. – Per, H, Ap, very rare.
- * 369. *Bromus inermis* Leyss. – Per, H, Ap, rather frequent.
- * 370. *B. sterilis* L. – Shl, T, Ar, very rare.
371. *B. tectorum* L. – Shl, T, Ar, frequent.
372. *B. secalinus* L. – Shl, T, Ar, very rare.
373. *B. hordeaceus* L. – Shl, T, Ap, frequent.
- * 374. *B. carinatus* Hook. & Arn. – Per, H, Ep, rare.
- * 375. *Festuca rubra* L. S. S. – Per, H, Ap, rare.
- * 376. *F. pratensis* Huds. – Per, H, Ap, rather frequent.
377. *Lolium perenne* L. – Per, H, Ap, common.
- * 378. *L. multiflorum* Lam. – Per, H, Ep, rare.
379. *Elymus repens* (L.) Gould – Per, H, Ap, common.
- * 380. *Secale cereale* L. – Shl, T, Er, rare.
- * 381. *Hordeum murinum* L. – Shl, T, Ar, very rare.
- * 382. *Zea mays* L. – Shl, T, Er, very rare.

3. 2. The general characterization of the vascular plants of Pabianice railway grounds

The vascular flora of the railway grounds of Pabianice is rich. At present, it comprises 382 taxa, which belong to 55 families. *Asteraceae* (62 taxa), *Poaceae* (41 taxa), *Fabaceae* (30 taxa), *Brassicaceae* (28 taxa), *Rosaceae* (20 taxa), *Polygonaceae* (18 taxa), *Caryophyllaceae* (17 taxa), *Lamiaceae* (17 taxa), *Scrophulariaceae* (15 taxa), *Apiaceae* (12 taxa) are the families that are richest in taxa. They comprise a total of 270 (70.7%) vascular plants of the investigated flora. In years 2005 and 2006 we recorded 188 new plant species.

The vascular plants of the very rare (116 taxa – 30.4%) and rare (112 taxa – 29.0%) groups were the most frequently recorded. They constituted a total of 228 taxa. The interesting plants of these groups are, e.g. *Rumex maritimus*, *Reynoutria sachalinensis*, *Kochia scoparia*, *Amaranthus blitoides*, *Eucastrum gallicum*, *Echinocystis lobata*. The other groups were: rather frequent taxa – 76 (19.9%), frequent taxa – 61 (16.0%), and common taxa – 16 (4.2%) groups. Perennial plants dominated in the vascular flora of the studied area (215 taxa – 56.3%).

As regards life forms, the plants of the groups of therophytes (167 taxa – 43.7%) and hemicryptophytes (129 taxa – 33.8%) dominated. The group of geophytes comprised 33 taxa (8.9%), of nanophanerophytes 22 taxa (5.8%) and of megaphanerophytes 21 taxa (5.5%). Only ten taxa (2.6%) belonged to the other groups: six to herbaceous chamaerophytes – (1.6 %) and four to woody chamaerophytes – (1.0%).

Plants of native origin (apophytes) constituted the most abundant group (243 taxa – 63.6 %) among the geographic-historical groups. The most common apophytes were: *Equisetum arvense*, *Polygonum aviculare*, *Chenopodium album*, *Berteroa incana*, *Erodium cicutarium*, *Cirsium arvense*, *Taraxacum officinale*, *Lolium perenne*, *Elymus repens*. Plants that belonged to the archaeophytes – 68 taxa (17.8%) were frequently and plants that belonged to the epocophyte – 33 taxa (8.6%) and ergaziophygophyte – 28 taxa (7.3%) groups were rather frequently recorded. Plants of the hemiagriophyte – 7 taxa (1.8%), ephemerohyte – 2 taxa

(0.5%) and holoagrophyte – 1 taxon (0.3%) groups were very rarely and rarely recorded. *Hyoscamus niger*, *Carduus acanthoides*, *Onopordum acanthium*, *Lactuca serriola* from the group of archaeophytes and *Corispermum hyssopifolium*, *Salsola kali*, *Amaranthus albus*, *A. blitoides*, *Datura stramonium* and *Eragrostis minor* from the group of epocophytes were those that should be mentioned as interesting in the group of anthropophytes.

4. DISCUSSION

The vascular flora of Pabianice railway grounds is reach. At present, it comprises 382 taxa that belong to 55 families. Its richness is mostly affected by diverse habitat conditions and spatial arrangement and size areas of these habitats, as well as by the vicinity of various communities, mainly ruderal and seminatural.

The characteristic distinguishing features of the investigated flora are attributable to very rare and rare plants (228 taxa – 59.7%). *Corispermum hyssopifolium*, *Reseda lutea*, *Hyoscamus niger*, *Datura stramonium*, *Scabiosa ochroleuca*, *Lactuca serriola*, *Eragrostis minor*, *Cynosurus cristatus*, *Puccinellia distans* belong, among others, to the interesting species of these groups. Plants of the common group (16 taxa – 4.2%), e.g. *Equisetum arvense*, *Polygonum aviculare*, *Fallopia convolvulus*, *Chenopodium album*, *Erodium cicutarium*, *Convolvulus arvensis*, *Achillea millefolium*, *Taraxacum officinale*, *Lolium perenne*, *Elymus repens* had the lowest share in the analysed flora.

The plants of native origin (apophytes) constituted the group that was richest in plants (243 taxa – 63.6%). *Agrimonia eupatoria*, *Trifolium fragiferum*, *Chaenorhinum minus*, *Scabiosa ochroleuca*, *Cynosurus cristatus* should be mentioned among the groups of very rare and rare species.

Results presented in this study may be used in the future as a basis for comparative analyses of railway ground floras in Central Poland, as well as the vascular plants of the Pabianice railway grounds.

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