Areviewof developing rigid vegetation

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Abstract

All continents except Antarctica were present, but contributions from Europe and Asia dominated, South America and Africa were moderately represented and North America and Australia underrepresented. In terms of vegetation types temperate grasslands and forests were the most frequent study subjects, while aquatic and weed communities were hardly addressed at all. We highlight the classification of the petrifying springs in Ire- land (Lyons & Kelly 2017, Phytocoenologia 47: 13–32) as a prototypic study we would like to be published in the journal and thus acknowledge the authors with the Editors' Award 2017. Also the two permanent sections, Ecoinformatics (with Long and Short Database Reports) as well as Phytosociological Nomenclature (with no- menclatural proposals and nomenclatural revisions) are important and much used parts of Phytocoenologia.

Keywords: *Phytocoenologia*; phytosociological no-menclature;vegetationclassification;vegetationsurvey;vegetation-plotdatabase.

*Phytocoenologia*is the world's leading journal with a fo-cusonvegetationclassificationandsurvey(Dengleretal.20 17). Since its re-launch in 2015, which reinforced thisfocus,46researchpapers(includingonereviewandsyn -thesis paper) dealing with the classification or descriptionof plant communities were published in our journal (49when you include one primarily methodological contri-bution and two papers focusing on nomenclatural as-pects). Not surprisingly, most of them come from Eur-asia (Table 1), the continent with the longest tradition invegetation classification. A little more surprising, how-ever, is the fact that >50% of the vegetation survey papersfocus on only five out of 49 formations (following theglobal formation type system of Faber-Langendoen et al.2016), and 35% of the papers are connected with just twoof them: Temperate Grassland &Shrubland (10 papers)and Cool Temperate Forest & Woodland (6 papers). Atotalof22formationswerestudiedinatleastonepaper.Ob vious gaps are in the tropics, but also in the borealzone and in aquatic and anthropogenic habitats (ruderaland weed communities). Geographically, North AmericaandAustraliaweremostunderrepresented.

A brief look into other journals publishing vegetationclassification papers shows that this bias is not specificfor*Phytocoenologia*.Neverthelesswewouldliketoem-phasise (again) that our journal warmly welcomes contri-butions dealing with all kinds of vegetation and using allkinds of classification systems and techniques includingmethodsdifferentfromtheBraun-Blanquetapproach,asmight be appropriate and common in some regions or inthe study of certain vegetation types. The only require-ment is that a paper focuses on the development or ap-plicationofatypologyofvegetationunits.Thesizeofthestud yareaisofminorimportance,asweacceptanythingfromco mprehensivestudiesdealingwithrelativelysmallbut insufficiently known regions to continental or globalreviews of specific vegetation types. The main reasonwhy we rejected papers even without sending them forreview was a lack of any vegetation typology. Submis-sions merely presenting species lists or other summariseddata for two or three *ad-hoc* vegetation units will not beconsideredassuitableforourjournal.Asetofhigh-qual-ity vegetation plot data is always a good basis for a con-tributionto*Phytocoenologia*,butclassificationsbasedonpl otlessrecordingwillnotbeexcludedaslongastheyaremeth odologicallyconvincing.

Table 1. Coverage of formations and continents in the papers published in *Phytocoenologia*during 2015–2017. If more thanone formation and/or continent was covered in one paper, decimal numbers summing up to one were recorded. Values arethe number of papers rounded to the nearest full number (+: less than a full paper, r: less than 20% of a paper). Formationsfollow Faber-Langendoen et al. (2016). N-Am: North-America, S-Am: South America, Eur: Europe, As: Asia, Af: Africa, Aus:Australia.

FORMATION	N-Am	S-Am	Eur	As	Af	Aus
Forest&Woodland						
1.A.1.TropicalDryForest&Woodland	.	1	.	+	.	.
1.A.2. Tropical Lowland Humid Forest	.	1	.	.	.	.
1.A.3.Tropical MontaneHumid Forest	.	.	.	.	.	.
1.A.4.TropicalFlooded&SwampForest	.	.	.	.	.	.
1.A.5.Mangrove	.	.	.	.	.	.
1.B.1.WarmTemperateForest&Woodland	.	.	+	1	.	.
1.B.2.CoolTemperateForest&Woodland	.	.	5	1	.	.
1.B.3.TemperateFlooded&SwampForest	.	.	.	.	.	.
1.B.4.BorealForest&Woodland	.	.	1	+	.	.
1.B.5.BorealFlooded&SwampForest						
Shrub&HerbVegetation						
2.A.1.TropicalLowlandGrassland,Savanna&Shrubland	.	.	.	+	.	.
2.A.2.TropicalMontaneGrassland&Shrubland	.	1	.	.	.	.
2.A.3.TropicalScrub&HerbCoastalVegetation	.	.	.	1	.	.
2.B.1.MediterraneanScrub&Grassland	.	.	1	.	.	.
2.B.2.TemperateGrassland&Shrubland	.	.	6	4	.	.
2.B.3.BorealGrassland&Shrubland	.	.	.	.	.	.
2.B.4.TemperatetoPolarScrub&HerbCoastalVegetation	1	.	3	+	.	.
2.C.1.TropicalBog&Fen	.	.	.	.	.	.
2.C.2.TemperatetoPolarBog&Fen	.	.	1	1	.	.
2.C.3.TropicalFreshwaterMarsh,WetMeadow&Shrubland	.	.	.	.	+	.
2.C.4.TemperatetoPolarFreshwaterMarsh,WetMeadow&Shrubland	.	.	1	.	1	.
2.C.5. SaltMarsh	.	.	2	1	.	.
DesertandSemi-Desert						
3.A.1.TropicalThornWoodland	.	.	.	.	.	.
3.A.2.WarmDesert&Semi-DesertScrub&Grassland	.	1	.	.	1	.
3.B.1.CoolSemi-DesertScrub&Grassland	.	.	.	+	.	.
Polar&HighMontaneScrub,Grassland&Barrens						
4.A.1.TropicalHighMontaneScrub &Grassland	.	.	.	.	.	.
4.B.1.Temperate&BorealAlpineDwarf-shrub&Grassland	.	.	1	2	.	.
4.B.2.PolarTundra&Barrens	.	.	.	.	.	.
AquaticVegetation						
5.A.1.Floating & Suspended Macroalgae Saltwater Vegetation	.	.	.	.	.	.
5.A.2.BenthicMacroalgaeSaltwaterVegetation	.	.	.	.	.	.
5.A.3.BenthicVascularSaltwaterVegetation	r	r	r	r	r	r
5.A.4.BenthicLichenSaltwaterVegetation	.	.	.	.	.	.
5.B.1.TropicalFreshwaterAquaticVegetation	.	.	.	.	+	.
5.B.2.TemperatetoPolarFreshwaterAquaticVegetation	.	.	.	.	.	.
OpenRock Vegetation						
6.A.1.TropicalCliff,Scree&OtherRockVegetation	.	.	.	.	.	.
6.B.1.Temperate&BorealCliff,Scree&OtherRockVegetation	.	.	.	1	.	.

Table1. cont.

FORMATION	N-Am	S-Am	Eur	As	Af	Aus
AnthropomorphicVegetation						
7.A.1.WoodyHorticulturalCrop	.	.	.	.	.	.
7.A.2.ForestPlantation &Agroforestry	.	.	.	.	.	.
7.A.3.WoodyWetlandHorticulturalCrop	.	.	.	.	.	.
7.B.1.Row& CloseGrain Crop	.	.	.	.	.	.
7.B.2.Pasture&HayField&Crop	.	.	.	.	.	.
7.B.3.HerbaceousHorticulturalCrop	.	.	.	.	.	.
7.B.4.FallowField&WeedVegetation	.	.	.	.	.	.
7.B.5.HerbaceousWetlandCrop	.	.	.	2	.	.
7.C.1.Lawn,Garden&RecreationalVegetation	.	.	.	.	.	.
7.C.2.OtherDevelopedVegetation	.	.	.	.	.	.
7.C.3.DevelopedWetlandVegetation	.	.	.	.	.	.
7.D.1.AgriculturalAquaticVegetation	.	.	.	.	.	.
7.D.2.Urban&RecreationalAquaticVegetation	.	.	.	.	.	.
Total	**2**	**5**	**23**	**19**	**5**	**1**

Outstandingpapersin*Phytocoenologia* 2017

Ineachissueof2017,onepaperwasselectedaseditors'choice and made open access free of charge for one year.Of these four papers, we selected Lyons & Kelly (2017)fortheEditors'Award2017.TheEuropeanHabitats Directive(92/43/EEC)hasgivenapushtovegetationclassification evenincountrieswithrelativelylittletraditioninphytosociology.Lyons&Kelly(2017)presentanoverviewofpetrifyingspring(*Cratoneurion*)communitiesinIreland,basedonanentirelynewdatasetandusingstate-of-the-artclassificationandordinationmethods.Thisallianceisapriorityhabitatunder AnnexIoftheHabitatsDirective,andphytosociologicalrevisionslikethisareveryimportantforconservationpractitioners.Atthesametime,thepaperisavaluablecontributionforafuture large-scale revision at the European level. The authorsdonotonlygiveasynopsisofthefloristiccompositionofthishabitattype,butalsoprovideacomparisonofthechemicalcompositionofspringwatersintheeight communitytypesdistinguished.

Extrazonalsteppeoutpostsinnorthern Siberiaaretheto picofthestudyofReineckeetal.(2017;editors'choicein issue 2). The phytosociological classification was basedon 210 relevés made by the authors in Central and NEYakutia.Theresultssupportedtheopinionthatthestepp es of northern Siberia represent species-poor vicari-ants of the Central Asian vegetation class of *Cleistogene-tea squarrosae*. North of the boreal treeline, steppes ofthis class are absent, and xeric microhabitats carry tundrasteppesoftheclass*Caricirupestris-Kobresietea*.

While three of the editor's choice papers of 2017 representsurveysofhithertolittleinvestigatedareas,thestudy of Di Pietro et al. (2017; editors' choice in issue 3) is anexcellentexampleofasyntaxonomicrevisionfromacountry with a great legacy of phytosociological works.However, such a heritage does not *per se* ensure betterknowledge of the plant communities of a region. On thecontrary,syntaxonomicconceptsvaryingamongauthorsand nomenclatural confusion can even obscure the prin-cipal patterns in vegetation. Therefore, large-scale revi-sions using all the existing data are of uttermost impor-tance. Di Pietro et al. (2017) present such an endeavourforthehigh-altitudeacidophilousgrasslandsoftheApennines. While the delimitation of the classes will re-main a question to be addressed on even larger geographicalscale,theauthorssuccessfullyprovideanoverviewoftheorders,alliancesandassociationspresentinItalyandhighlight the ecological and biogeographical gradientsunderlyingthesesyntaxonomicunits.

A pioneer study on aquatic and semi-aquatic vegetationinEastAfricaispresentedbyAlvarez(2017;editors'choice in issue 4), thereby focusing on a greatly under-representedregionandtwolittleinvestigatedformationsatthesametime(seeTable1).Interestingly,heclassifiesthestudiedcommunitiesintoclassesalsocommoninEu-rope, which is perhaps not so surprising since we aredealing with azonal vegetation. Some of the orders andalliances are believed to have a pantropical distribution.Thus, this work will be an important reference for otherstudiesontropicalwetlandvegetation.

SpecialSections

TheEcoinformaticsSectionof*Phytocoenologia*hasproven tobethe mostimportantpublication channelfor

information about vegetation plot databases in the world.IneveryissuewehadatleastoneLongorShortDatabaseReport,describingaspecificdatabaseincooperationwith theGlobalIndexofVegetationPlotDatabases(Dengler et al. 2011; https://www.givd.info/). Some ofthem are comprehensive databases on regional, nationalorsupranationallevellikethe VegetationDatabase ofTa-tarstan (Prokhorov et al. 2017), the Vegetation Databaseof Albania (De Sanctis et al. 2017), the Nationwide Ve-getation Plot Database from Italy (Agrillo et al. 2017) orthe Vegetation of Middle Asia Database (Nowak et al.2017). Others are thematic databases, like the RomanianForest Database (Indreica et al. 2017), the Gravel BarVegetationDatabase(Kalnikova&Kudrnovsky2017),the Mediterranean *Ammophiletea*Database (Marcenò&Jiménez-Alfaro 2017) and RanVegDunes, a random-plotdatabaseofItaliandunes(Sperandiietal. 2017).

ThePhytosociologicalNomenclatureSectionistherefer enceplaceforpapersdealingwithnomenclaturalis-sues. In the past year, two formal proposals to conservenames (Terzi et al. 2017a; Theurillat et al. 2017) were putforward and a nomenclatural revision of Mediterraneanchasmophytic vegetation (Terzi et al. 2017b) was published.Authorswhowishtosubmitanomenclaturalproposal should have a look to the guidelines (Willner et al.2015).

CONCLUSIONS

The Impact Factors and CiteScores of 2016 (released insummer 2017) were 1.66 and 1.63, respectively, and thusabove 1.5 for the third year in a row, while before thejournal's re-launch both bibliometric indices always hadbeen≤1.Ontheonehand,thisreflectsthemanystepsin journaldevelopmenttakenbytheneweditors.Onthe other hand, it poses the challenge of keeping and furtherimprovingthisstandardinthefuture.Ourconstant searches for qualified and diverse members of the edito-rial team and for exciting journal contributions from alloverthe worldtestifyourattemptsinthisdirection.Where appropriatewe regularlyimplementimprovements inthejournalformatandlayout.Startingwiththisissue, for example, we offer to accompany author nameswithhyperlinkstotheirORCIDs,whichareuniqueIDsof researchers issued by a global non-profit organisationthat allow retrieving the publication work of specific authorsevenifthereare moreauthorswiththesamenameora certainpersonpublishedunderdifferentnames(seehttps://orcid.org). One aspect that certainly needs fur-ther improvement is the review times and particularly theproduction times from acceptance to online first (FastTrack) publication, andwehaveissuedseveralmeasuresto this end. However, the most important point for hequality of a journal is the quality and breadth of contri-butions – and in this spirit we invite you to submit yourexcellent studies developing, testing or using vegetationclassifications.

References

Agrillo, E., Alessi, N., Massimi, M., Spada, F., De Sanctis, M.,Francesconi, F., Cambria, V.E. &Attorre, F. 2017. Nation-wide Vegetation Plot Database – Sapienza University ofRome: state of the art, basic figures and future perspectives.*Phytocoenologia*47: 221–229.

Alvarez,M.2017.Classificationofaquaticandsemi-aquaticvegetationintwoEastAfricansites:Cocktaildefinitions andsyntaxonomy.*Phytocoenologia*47:345–364.

DeSanctis,M.,Fanelli,G.,Mullaj,A.&Attorre,F.2017.Vegetation DatabaseofAlbania.*Phytocoenologia*47:107–108.

Dengler,J.,Bergmeier,E.,Jansen,F.&Willner,W.2017.*Phytocoenologia*:theleadingjournalwithafocusonvegetation classification.*Phytocoenologia*47:1–11.