Anais da Academia Brasileira de Ciências (2015) 87(1): 249-274
(Annals of the Brazilian Academy of Sciences)
Printed version ISSN 0001-3765 / Online version ISSN 1678-2690
http://dx.doi.org/10.1590/0001-3765201520130510
www.scielo.br/aabc

A study of the dry forest communities in the Dominican Republic

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Manuscript received on December 10, 2013; accepted for publication on October 24, 2014

ABSTRACT

This paper is a floristic and phytosociological study of the dry forest communities of the Dominican Republic. A total of 69 relevés in dry forest biotopes were carried out. The samples were subsequently subjected to Detrended Correspondence Analysis for the determination and study of possible groupings. The study does not cover tree formations growing on serpentines, nor the so-called semideciduous forests, peculiar to areas with higher rainfall. A total of nine phytocoenoses were identified. The most significant results led to the description of six new phytosociological associations: *Simaroubetum berteroani* (thorny dry forest on coastal dunes), *Phyllostylo rhamnoidis-Prosopidetum juliflorae* (southern Dominican disturbed dry forest), *Consoleo moniliformis-Camerarietum linearifoliae* (dry forest on hard limestones), *Lemaireocereo hystricis-Prosopidetum juliflorae* (northern Dominican disturbed dry forest), *Lycio americani-Prosopidetum juliflorae* (disturbed dry forest on saline soils) and *Guettardo ellipticae-Guapiretum discoloris* (dry forest on flat-topped hillocks in Montecristi). This is an important step forward in the phytosociological and floristic studies of the Caribbean territories.

Key words: Caribbean, endemism, multivariate analysis, phytosociology, xericity.

INTRODUCTION

About 40% of the tropical mass of the planet Earth is covered by forest. According to Holdridge (1967), 42% of that area is made up of dry forests. The Instituto Alexander von Humboldt (1998) defines tropical dry forest as a plant formation that is found at 0-1000 m with annual average temperatures of 17-35 °C, annual rainfall of 700-2000 mm and a climate characterized by one or two dry seasons in the year. Under such conditions, the vegetation of the tropical dry forest presents typically continuous cover and, in

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many cases, partial or complete leaf drop during the dry seasons (Villalobos-Vega 2001, Sayer and Newbery 2003).

Neotropical dry forests are found in Mesoamerica and South America following a disjunct pattern. Their latitudinal range is from Florida in the north to Bolivia and Paraguay in the south, including both continental and oceanic areas (Pennington et al. 2006, Galán de Mera and Vicente Orellana 2007). They can be divided into nine areas, one of which is the area of Central America and the Caribbean where this study was carried out. These forests are fragmented and frequently isolated by hundreds of kilometres of tropical wet forests (Pennington et al. 2000).

Tropical dry forests are considered to be one of the most endangered ecosystems on Earth (Janzen 1988). The high fertility of the soils has made these areas the object of great changes so that they can be used for farming and cattle-raising (Janzen 1983, Murphy and Lugo 1986).

According to the *Atlas de los Recursos Naturales de República Dominicana* (Reyna et al. 2012), the Dominican Republic has an area of 11,616.67 km^2 where we can find thorny scrubs, subtropical dry forests, wet forest in transition to dry forest and dry forest in transition to subtropical wet forest. This figure represents 24.1% of the area of the whole country. The area has undergone a slight increase in recent years, because previous percentage was 22.89% according to Moya (2004).

The dry forest of the Dominican Republic has been studied from a floristic and phytosociological point of view by Hager and Zanoni (1993), May and Peguero (2000), García and Clase (2002), García et al. (2002), Veloz and Peguero (2002), Peguero and Salazar (2002), De los Ángeles et al. (2005), Cano et al. (2006, 2010a). García-Fuentes et al. (2010) and Cano and Veloz (2012).

It is worth noting that other studies have been conducted on flora and plant communities related to dry forest in Central America (Knapp 1965) and surrounding Caribbbean islands such as Bermuda (Knapp 1980) and Cuba (Borhidi 1991). Furthermore, Trejo-Torres and Ackerman (2002) analyzed floristic distribution patterns by means of parsimony analysis in three Caribbean islands (Hispaniola, Mona and Puerto Rico), whilst Santiago-Valentín and Olmstead (2004) dealt with angiosperms of the Caribbean and set phylogenetic relationships among some typical genera of the dry forest (e.g, *Sabal, Poitea, Exostema, Bactris* and *Erithalis*).

However, there is no comprehensive phytosociological study on dry forest in the Dominican Republic, with an analysis of all the phytosociological communities currently present in the territory.

The aim of our research was to perform a comprehensive study of the vegetation of wild dry forest (with the exception of dry forest on serpentines and dry forest in transition to wetter forest) in the Dominican Republic, to describe the corresponding phytocoenoses by means of the phytosociological method, to arrange these plant formations into a syntaxonomical scheme and to describe their ecology and distribution areas in order to provide researchers and habitat managers with a basic outline for their work.

MATERIALS AND METHODS

Study Area

The study area is located between latitudes 17° 30'-20° 00' North and longitudes 68° 00' - 72° 00' West. (Reyna et al. 2012).

Most of the areas of dry forest have a common soil profile. These soils are made up of alluvial limestones or reef limestones which were below water level during the Quaternary (Moya 2004, Mollat et al. 2004). In Tertiary and Quaternary times the erosion and subsequent sedimentation of materials gave rise to the current territories known as Hoya Enriquillo, the Bahoruco-Neiba platform,

Samaná, Valle del Cibao, Llanura del Este and the young Cordillera Septentrional (Mollat et al. 2004).

Climatically, the study area has a tropical climate. Annual average temperature is 25 °C with very little variation in the day/night and season cycles. August is the hottest month and January is the coldest one. There are two wet seasons in the year, from April to June and from September to November. The dry season is from December to March. The rainfall regime is heavily conditioned by the direction of the trade winds and the orientation of the mountain ranges. The highest rainfall is in the northern areas, which are under the influence of the Atlantic, whereas the driest sites are in the S-SW of the island (Baní, Azua, Lago Enriquillo, Pedernales and Valle de San Juan) and NW of Valle del Cibao (Montecristi) (Cano et al. 2010b).

The bioclimates of the Dominican Republic are Tropical Pluviseasonal, Tropical Pluvial and Tropical Xeric (occasionally under Bixeric and Seropluvial variants), with the dominance of the latter two bioclimates. The thermotype ranges from infratropical to supratropical, and the ombrotype from lower semiarid to upper humid (Cano et al. 2012).

From a biogeographical point of view, the study area corresponds to Hispaniola Province (Morrone 2001) which includes two subprovinces, Central and Caribbean-Atlantic (Cano et al. 2009, Cano and Cano Ortiz 2012).

The Dominican dry forest is restricted to areas with a Tropical Xeric bioclimate, in the infratropical (thermotropical) dry-semiarid bioclimatic belt of the Caribbean-Atlantic subprovince.

Studies on Flora and Vegetation

Plant relevés were taken in field itineraries throughout the Dominican Republic where the dominant vegetation corresponded to tropical dry forest as defined by the Instituto Alexander von Humboldt (1998).

Vegetation studies were carried out following the methods developed by Braun-Blanquet (1979) and Géhu and Rivas-Martínez (1982). Initially, a total amount of 110 field samples were obtained. Our syntaxonomical classification follows the criteria suggested by Galán de Mera and Vicente Orellana (2006).

The nomenclature and the description of new syntaxonomical units comply with the International Code of Phytosociological Nomenclature (ICPN) (Weber et al. 2000).

To determine the taxa we used *La Flora de La Española* (Liogier 1996-2000).

For the preliminary analyses of the data we created an original matrix with 110 relevés x 549 plant species. The abundance-dominance indices of Braun-Blanquet were subsequently transformed according to Van der Maarel (1979).

Given the heterogeneity of the types of dry forest in our data matrix, the preliminary multivariate analyses did not produce clear groups at association level. As a result, we decided to exclude from our initial matrix those relevés taken in dry forests growing on serpentines and any dry forest in transition towards semideciduous forest, as defined in the classification of Hager and Zanoni (1993). The resulting matrix contained 69 samples x 318 plant taxa. Subsequently, this matrix was filtered to remove the taxa which were not present in at least two relevés. The new data matrix obtained in this manner contained 69 x 171 species. The map in Fig. 1 shows the geo-references of the relevés.

The resulting matrix was transformed into a distance matrix (Bray-Curtis index) for subsequent cluster analysis classification (Ward's method). Eight groups were extracted from this analysis through partitioning at a level of similarity of 1.5 (Fig. 2).

To confirm the groups of climactic dry forest produced in the first analysis we subsequently conducted a Detrended Correspondence Analysis on a second matrix of relevés. This time a Principal Coordinate Analysis (PCoA) was performed on a data matrix with 47 relevés x 165 species (Fig. 3). This data matrix was the result of extracting the groups of

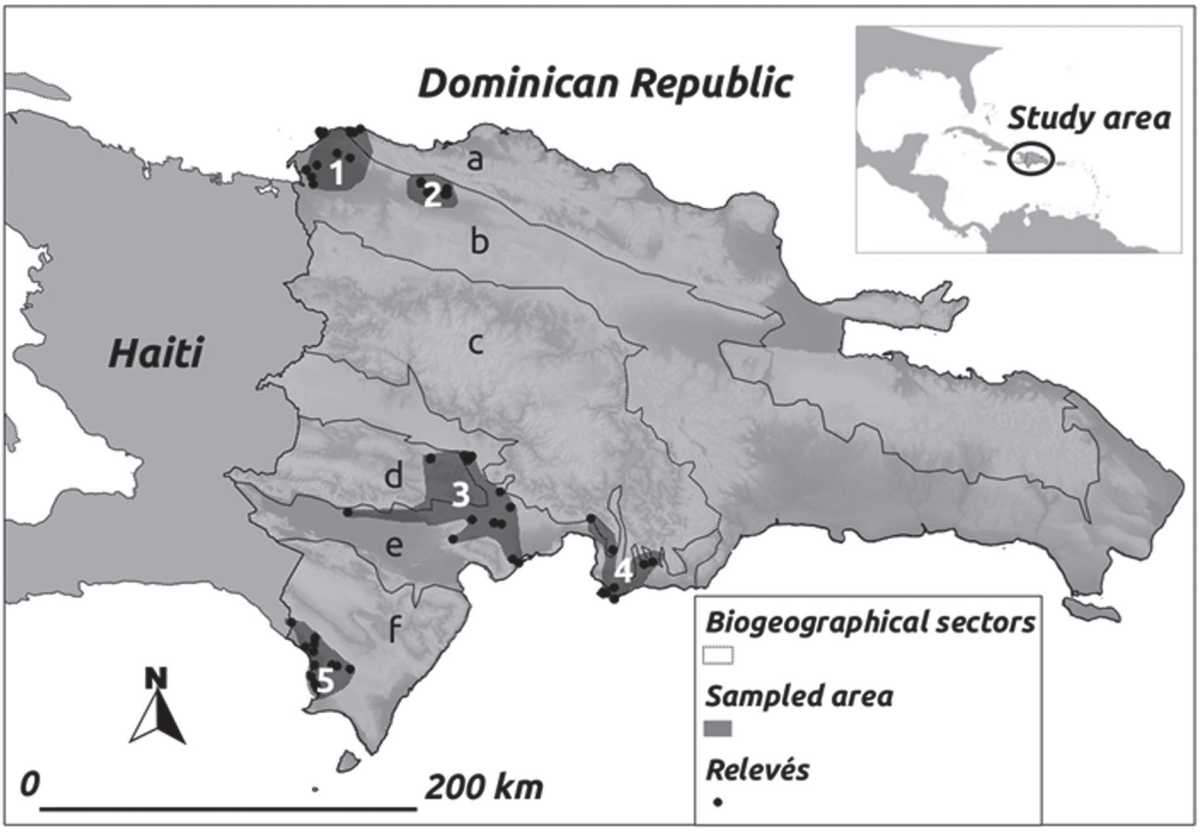

Figure 1 - Location of the phytosociological relevés conducted in the study area: (1) Relevés 41, 42, 43, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69. (2) Relevés 40, 45, 46, 47, 48, 49, 50, 51, 52, 53. (3) Relevés 7, 8, 9, 10, 11, 12, 13, 14, 15, 27, 28, 31, 32, 36, 37, 44. (4) Relevés 1, 2, 3, 4, 5, 6, 29, 30, 38, 39. (5) Relevés 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 33, 34, 35. Biogeographical sectors: **(a)** North. **(b)** Caribbean-Cibensean. **(c)** Central. **(d)** Neiba-Matheux-Northwest. **(e)** Azua-San Juan-Hoya Enriquillo-Port-au-Prince-Artiobonite-Gonaivës. **(f)** Bahoruco-Hottensean. (Taken and adapted from Cano et al. 2010b).

relevés identified as B and C in the dendrogram of Fig. 2, which belong to savannah-like communities of *Leptochloopsis virgata*, already described for science.

All statistical treatments were conducted using the *Ginkgo* programme (Cáceres et al. 2003).

RESULTS AND DISCUSSION

Thorny dry forest on coastal dunes (Group A Fig. 2, Table I)

The cluster analysis reveals a discrete group, "Group A", made up of three relevés (Table I). As can be seen in Fig. 3, these three relevés also appear grouped together in the upper central part of the PCoA diagram.

The group corresponds to a small set of samples taken in the Bahía de Las Calderas, on dunes under coastal influence. The dominant species in this azonal association is *Simarouba berteroana* ("*olivillo"*), a plant endemic to Haiti and the Dominican Republic.

The samples reveal that this plant community growing on semi-stabilized dunes has been heavily altered. Small-sized scrub, much of it spinescent, and climbers are overwhelmingly present too. The cover rate of this vegetation is low and the average size of the phytocoenosis ranges from 3 to 5 m.

The dominant species can be found distributed in specific places in other parts of the island, such

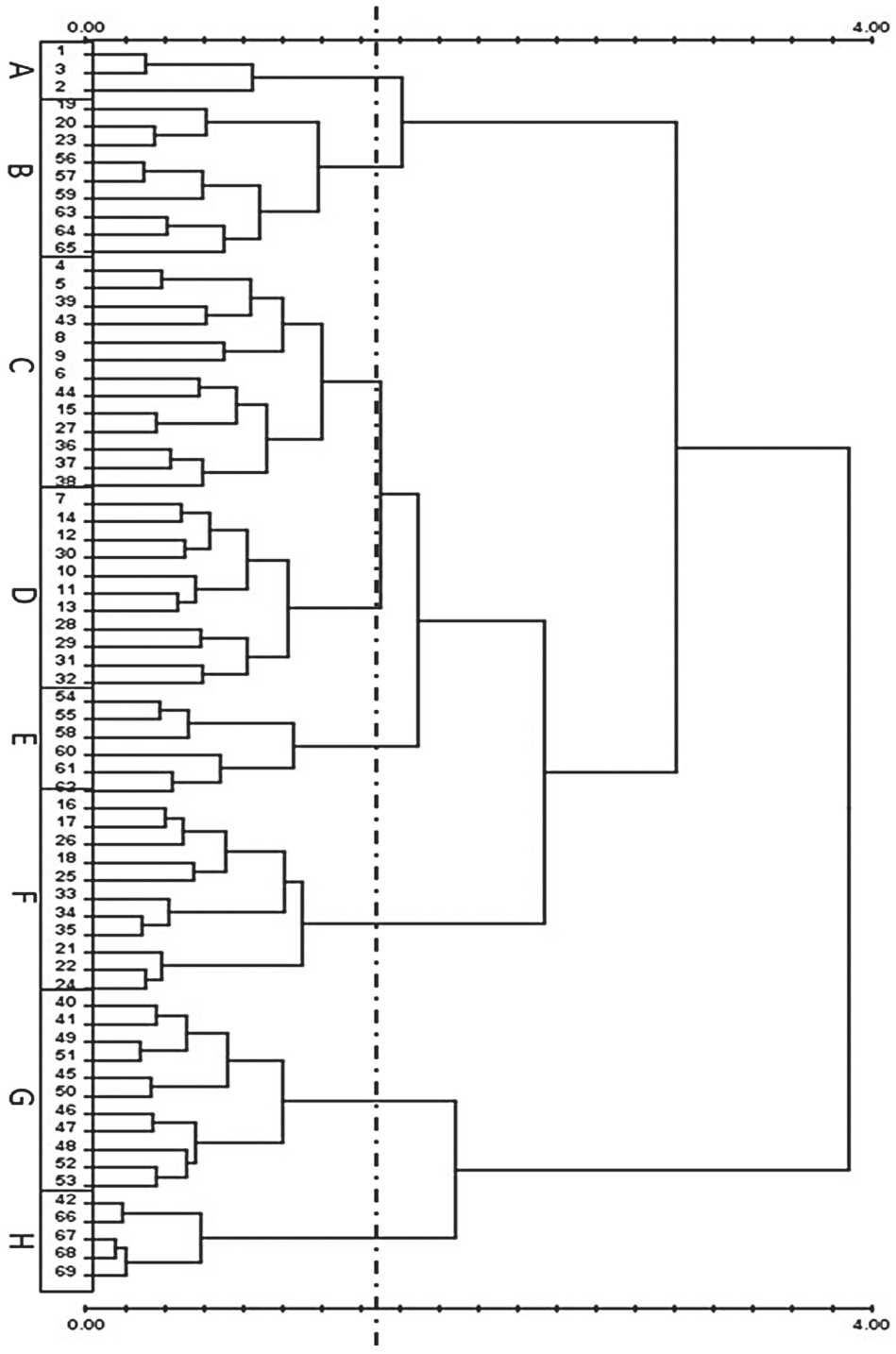

Figure 2 - Data matrix dendrogram with the different groups.

as Sierra de Martín García, in Dajabón and in Haiti. However, it is in the sites in the south where it gives rise to dry forest phytocoenoses on sandy soils, specifically in Bahía de las Calderas (Peravia, Sector Azua-San Juan-Hoya Enriquillo-Port-au-Prince-Artiobonite-Gonaivês).

The formation was reported by Hager and Zanoni (1993), but they did not describe the

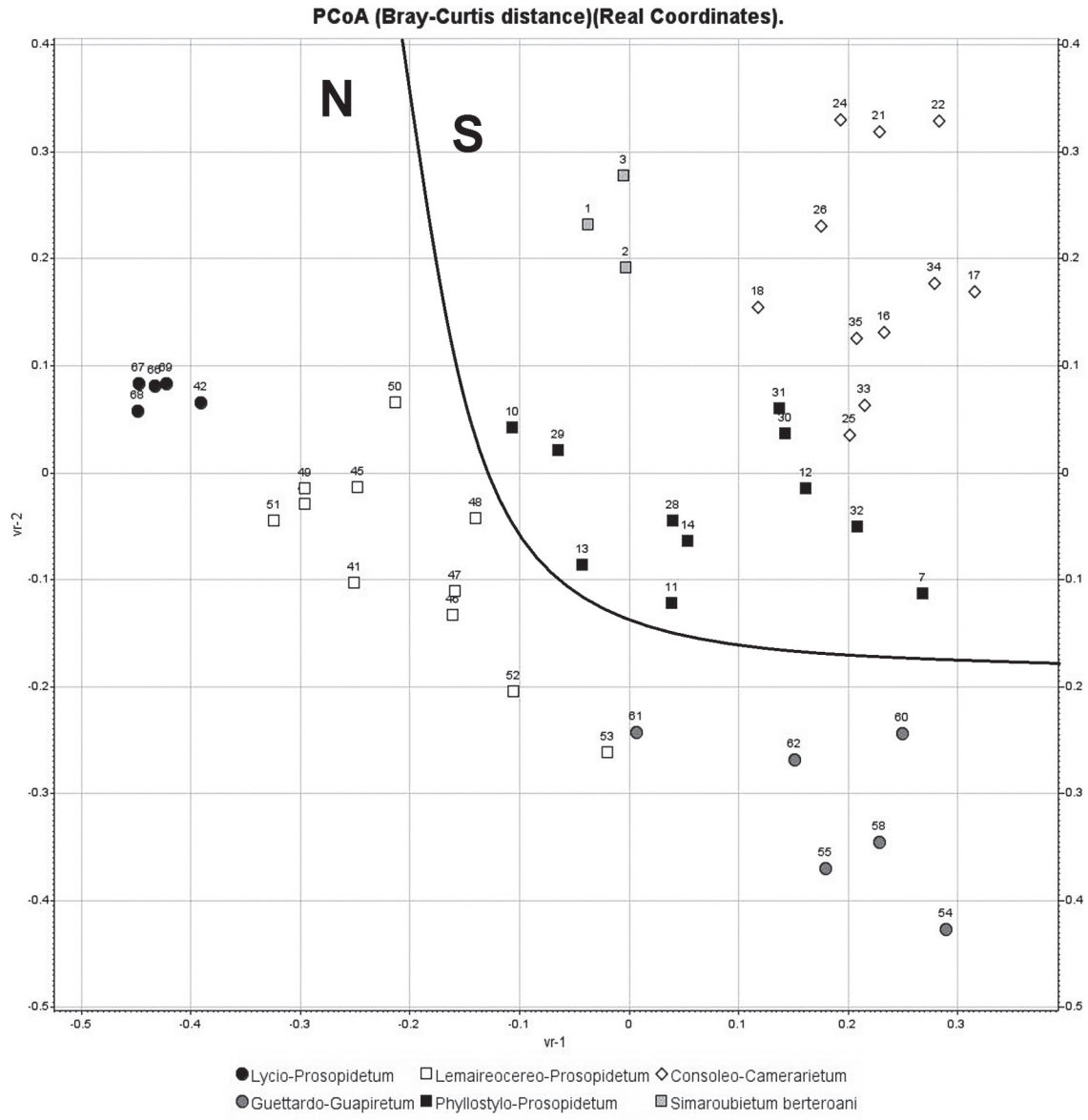

Figure 3 - Principal Coordinate Analysis (PCoA) for groups with tree-like and shrub-like vegetation. The dividing line separates the associations found in the south (S) and those found in the north (N) of the Dominican Republic.

community in detail. This is a new azonal phytosociological association dominated by phreatophytes, growing on mobile and semi-stabilized dunes. The association is in prime conditions in the upper infratropical lower dry bioclimatic belt, with rainfall under 700 mm. For this new syntaxon we propose the name *Simaroubetum berteroani ass. nova* (Table I, *typus* rel. 3) and we include it in the class *Cercidio-Prosopidetea* Borhidi 1996.

Similar dry forests have recently been recorded in Caribbean Colombia by Rangel-Churio (2012) showing high presence indices of *Prosopis juliflora* and *Corchurus hirsutus*. Nevertheless, this is a clearly different association since *Simarouba berteroana* is an endemic species to the Hispaniola island.

On sandy marls the association makes catenal contact with the savannah-like communities of *Leptochloopsis virgata* (*Solano-Leptochloopsietum*

virgatae Cano, Veloz & Cano-Ortiz 2010), produced by the alteration of dry forests made up of *Prosopis juliflora.*

TABLE I
Simaroubetum berteroani ass. nova.

Nr. relevé	1	2	3
Area (x10m)	50	20	50
Cover rate (%)	70	20	75
Altitude (masl)	1	1	0
Average height (m)	3	2	3
Slope (%)	-	-	-
Orientation	-	-	-
Characteristics of association:			
Simarouba berteroana	3	3	5
Pithecellobium unguis-cati	2	1	1
Corchorus hirsutus	1	1	1
Characteristics of alliance and order:			
Capparis flexuosa	+	.	+
Characteristics of class:			
Prosopis juliflora	2	1	1
Accompanying species:			
Ziziphus rignonii	1	.	+
Harrisia nashii	+	.	+
Cylindropuntia caribaea	+	.	+
Pilosocereus polygonus	+	.	.
Lemaireocereus hystrix	+	.	.
Opuntia cubensis	+	.	+
Bursera simaruba	.	.	1
Consolea moniliformis	.	.	+

Other accompanying species: *Guapira brevipetiolata:* 1 in 1, + in 3; *Bunchosia glandulosa:* 1 in 1; *Tephrosia senna:* + in 1, 1 in 2; *Comocladia dodonaea:* + in 1, + in 3; *Jatropha gossypiifolia:* + in 1, + in 3; *Marsdemia linearis:* + in 1, + in 3; *Pentalinon luteum:* + in 1, + in 3; *Echites umbellata:* + in 1; *Metastelma ekmanii:* + in 1; *Pictetia sulcata:* + in 1; *Stigmaphyllon emarginatum:* + in 1; *Boerhavia scandens:* + in 1; *Croton discolor:* 1 in 2.

Sites: (1) Salinas settlement, 19Q 336642E, 2013848N. (2) Salinas settlement, 19Q 336642E, 2013848N. (3) Bahía de Las Calderas Natural Monument (Salinas), 19Q 337990E, 2014042N.

Savannah-like prairies of Leptochloopsis virgata (Groups B and C Fig. 2, Tables II and III)

The traditional alteration of dry forest areas for farming or cattle-raising activities which are later abandoned, together with charcoal-making exploitations and the recent development of tourist resorts, have produced different grass-sized plant formations dominated by robust, perennial, bunched and deep-rooted Gramineae mostly presided by *Leptochloopsis virgata* and usually enriched with chamaephytes.

Groups B and C comprise all savannah-like phytocoenoses widely distributed over the potential area of dry forests, usually on extremely xeric substrates and with different catenal contacts with climactic formations.

Many variants of the structure and floristic composition of these kinds of communities can be found because of the capacity for regeneration of dry forests. Some formations are almost exclusively made up of *Leptochloopsis virgata*. In other cases the climatic and edaphic conditions, together with the capacity for re-sprouting of the woody species in dry forest, produce variable enrichment in shrubs, lianas, epiphytes and tree- or scrub-like species.

Hager and Zanoni (1993) already mentioned these kinds of communities under the label of ”lowland savannahs”. They talk of a plant association dominated by *Leptochloopsis virgata*, but they record its occurrence only in the territories near Lago Enriquillo and in the vicinity of Laguna en Medio, on flat hills and low plateaus.

More recently, Cano et al. (2010a) conducted a phytosociological study of these formations and found four plant associations, one in the NW territories of the Dominican Republic on serpentine soils (*Leptogono buchii-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010), a second one in the territories of Cibao Valley (*Crotono astrophori-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010), a third one in

the territories of Pedernales-Ceitillán (S-SW of the Dominican Republic) (*Melocacto pedernalensis-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010), and a fourth one in the arid territories situated in Baní, Azua and Lago Enriquillo, in the infratropical dry bioclimatic belt (*Solano microphylli-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010).

The main distinguishing element of the association *Melocacto pedernalensis-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010 is the Cactaceae *Melocactus pedernalensis*. The plant is a local endemic species which grows on platform karsts modelled out of highly soluble limestones with high secondary porosity. The resulting landscape presents a saw-like profile with deep chasms and crevices in the surface of the bedrock ("dog-tooth" limestone), with almost no soil and very hard to colonize by *Leptochloopsis virgata*.

Chamaesyce adenoptera and *Portulaca rubricaulis* are other taxa considered as characteristic species of the association in the only two relevés provided by Cano et al. (2010a, Table V). *Chamaesyce adenoptera* is regarded by these authors as being endemic to Sierra de Bahoruco and Cibao Valley. However, the species is widely distributed all over the Dominican Republic, Cuba, the USA and Central America. *Portulaca rubricaulis* is found in North America, the Caribbean, and Central and South America. Both species have a wide distribution area and a highly eurioic nature. Dry forest tree-like and shrub-like species are also included as characteristic of the association. This is the case of *Caesalpinia domingensis* or *Senna angustisiliqua*.

The remaining group of species shown as characteristic in the original table for the association *Melocacto-Leptochloopsietum virgatae*, such as *Mammillaria prolifera, Croton discolor, Serjania sinuata, Caesalpinia domingensis, Senna angustisiliqua*, *Cordia salvifolia*, *Lantana exarata* or *Melochia tomentosa*, are not exclusive to the territories of the south. They can also be found in the dry and semiarid areas in the north of the Dominican Republic, and are included as characteristic taxa in other associations of *Leptochloopsis virgata* in the above mentioned paper.

Likewise, the association of *Leptochloopsis virgata* which these authors describe for the Caribbean-Cibensean Sector (*Crotono astrophori-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010) presents *Croton astrophorus* and *Gochnatia microcephala* var. *buchii* as characteristic species. These two taxa are endemic to the north of the Dominican Republic, together with *Lantana pauciflora*, which can also be found in Haiti and Cuba. Other species described as characteristic in Table IV of the above mentioned paper, such as *Croton discolor*, *C. humilis*, *C. poitaei*, *Pictetia sulcata* (which appears in the table repeated under the synonymous form of *P. spinifolia*) or *Scolosanthus triacanthus*, are usually found in the rest of the phytosociological tables of the paper, since their distribution area is not restricted to this sector.

In Fig. 2 our relevés with a dominance of *Leptochloopsis virgata* fall into two groups, which we call Group B and Group C (Tables II and III, respectively).

In Table II (Group B, Fig. 2) we present a group of 9 relevés with a high occurrence of *Leptochloopsis virgata*. The first three relevés were taken in the south of the Dominican Republic (Pedernales, Bahoruco-Hottensean Sector) on Quaternary deposits, and the rest were taken in the area of Montecristi, in the NW (Caribbean-Cibensean Sector), on conglomerate soils, sandstones, marls and calcarenites.

In Table II, only one of the relevés conducted in Pedernales contains the occasional occurrence of *Melocactus pedernalensis*. As already mentioned, we found this species associated with plant formations of shrubs and dry forest growing on

hard "dog-tooth" limestones, but never included in formations of *Leptochloopsis virgata*.

The remaining six relevés were conducted in the Caribbean-Cibensean Sector. Again, *Croton astrophorus* is relatively frequent in our samples but always accompanying climactic woody formations, instead of grassy communities of *Leptochloopsis virgata*. There is no evidence of *Lantana pauciflora* whilst *Gochnatia microcephala* var. *buchii* is present, but only to a very small extent.

The number of distinguishing taxa for these two associations described in Cano et al. (2010a) is extremely low and they both share many characteristic species. This raises doubts. In our opinion, this is one single plant association distributed throughout the territories of the NW of the Caribbean-Cibensean Sector, the valley of Azua-San Juan-Hoya Enriquillo and the area of Pedernales-Ceitillán (Bahoruco-Hottensean sector). All these territories have an infratropical thermotype under semiarid or dry ombrotype and represent the most arid areas in the W of the Dominican Republic.

However, no modification of the associations already described and published should be made without more detailed sampling in order to clarify and determine the existence of one or two communities. We maintain the ascription of the associations of *Leptochloopsis virgata* suggested and published by Cano et al. (2010a) (see Table II, associations *Melocacto pedernalensis-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010 and *Crotono astrophori-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010).

TABLE II

***Melocacto pedernalensis-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010 (relevés 19, 20, 23); *Crotono astrophori-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010 (relevés 56, 57, 59, 63, 64, 65).**

Nr. relevé	19	20	23	56	57	59	63	64	65
Area (x10m)	50	50	50	30	30	30	30	50	50
Cover rate (%)	35	50	60	90	90	95	80	85	70
Altitude (masl)	11	14	16	26	20	57	70	60	8
Average height (cm)	70	60	60	95	95	98	95	90	400
Slope (%)	-	-	-	-	-	-	-	-	-
Orientation	-	-	-	-	-	-	-	-	-
Characteristics of the association *Melocacto pedernalensis-Leptochloopsietum virgatae*:									
Jacquemontia havanensis	.	+	1	.	.	.	.	.	.
Lantana exarata	.	+	1	.	.	.	.	.	.
Lonchocarpus pycnophyllus	+	.	.	.	.	.	.	.	.
Melocactus pedernalensis	.	+	.	.	.	.	.	.	.
Lonchocarpus neurophyllus	.	+	.	.	.	.	.	.	.
Characteristics of the association *Crotono astrophori-Leptochloopsietum virgatae*:									
Gochnatia microcephala var. *buchii*	.	.	.	.	.	1	.	.	.
Mammillaria prolifera subsp. *prolifera*	.	.	.	.	.	.	+	.	.
Characteristics of alliance and order:									
Leptochloopsis virgata	2	2	2	4	5	5	4	2	2
Croton discolor	+	+	1	2	2	1	1	+	+
Turnera diffusa	1	+	1	1	2	.	1	1	.
Corchorus hirsutus	.	.	+	1	1	1	+	+	1

TABLE II (continuation)

Characteristics of alliance and order:									
Pictetia sulcata	.	.	.	+	1	2	1	1	.
Melochia tomentosa	+	.	.	1	2	.	+	.	.
Croton poitaei	.	2	+	.	+	+	.	.	.
Randia aculeata	.	.	.	.	+	+	.	+	+
Calliandra haematomma	.	.	.	.	.	2	2	3	.
Brya buxifolia	.	.	.	.	.	.	2	2	1
Opuntia dillenii	+	.	.	.	.	.	.	+	.
Ziziphus rhodoxylon	.	.	.	.	.	.	+	+	.
Lantana involucrata	+	.	.	.	.	.	.	.	.
Lantana leonardorum	.	.	.	+	.	.	.	.	.
Exostema caribaeum	.	.	.	.	.	+	.	.	.
Reynosia uncinata	.	.	.	.	.	.	+	.	.
Cylindropuntia caribaea	.	.	.	.	.	.	.	+	.
Agave antillarum	.	.	.	.	.	.	.	+	.
Croton lobatus	.	.	.	.	.	.	.	.	2
Melocactus lemairei	.	.	.	.	.	.	.	.	1
Oplonia spinosa	.	.	.	.	.	.	.	.	+
Characteristics of class:									
Crossopetalum decussatum	+	1	+	.	.	.	+	3	+
Guapira brevipetiolata	+	.	.	.	.	.	.	.	.
Crossopetalum rhacoma	.	.	.	.	.	1	.	.	.
Malpighia coccigera	.	.	.	.	.	.	+	.	.
Accompanying species:									
Prosopis juliflora	+	.	.	+	+	.	+	+	1
Pentalinon luteum	+	+	+	.	+	.	.	.	.
Ambrosia artemisiifolia	.	.	.	.	.	2	1	3	.
Mimosa diplotricha	1	+	2	.	.	.	.	.	.
Acacia macracantha	+	+	.	.	.	.	.	1	.
Harrisia nashii	+	.	.	.	.	.	.	+	+
Stigmaphyllon emarginatum	.	.	.	+	.	+	.	.	1
Maytenus buxifolia	.	.	.	.	1	.	.	1	1
Pilosocereus polygonus	.	.	.	.	.	.	+	+	2
Heliotropium haitiense	.	1	+	.	.	.	.	.	.
Guaiacum officinale	.	+	.	.	.	.	+	.	.
Lemaireocereus hystrix	.	+	.	.	.	.	.	.	1
Jacquinia arborea	.	+	.	.	.	.	.	.	1
Echites umbellata	.	.	.	.	+	+	.	.	.
Eupatorium sinuatum	.	.	.	.	.	.	+	1	.
Caesalpinia coriaria	.	.	.	.	.	.	+	.	3
Consolea moniliformis	.	.	.	.	.	.	.	1	+
Senna atomaria	+	.	.	.	.	.	.	.	.
Guaiacum sanctum	.	+	.	.	.	.	.	.	.
Bourreria ovata	.	.	.	.	.	1	.	.	.
Zanthoxylum elephantiasis	.	.	.	.	.	+	.	.	.
Galactia striata	.	.	.	.	.	.	+	.	.
Tillandsia recurvata	.	.	.	.	.	.	+	.	.
Solanum aquartia var. luxurians	.	.	.	.	.	.	.	+	.

TABLE II (continuation)

Accompanying species:									
Citharexylum fruticosum	.	.	.	.	.	.	.	1	.
Opuntia cubensis	.	.	.	.	.	.	.	.	1
Lippia micromera	.	.	.	.	.	.	.	.	+
Centrosema virginianum	.	.	.	.	.	.	.	.	+

Sites: (19) Jaragua Natural Park, near Cabo Rojo, 19Q 219732E, 1984672N. (20) Cabo Rojo (Jaragua Natural Park) 19Q 218395E, 1979991N. (23) Las Águilas bay (Pedernales), 19Q 221194E, 1974641N. (56) Morro Montecristi, 19Q 222986E, 2200769N. (57) Morro Montecristi, 19Q 223544E, 2201480N (59) W of Morro Montecristi, 19Q 221895E, 2201771N. (63) Old road Montecristi-Puerto Plata, km.13, 19Q 234505E, 2201316N. (64) Old road Montecristi-Puerto Plata, km. 13, 19Q 234505E, 2201316N. (65) Old road Montecristi-Puerto Plata, km. 10, 19Q 234505E, 2201327N.

We identify the relevés of Table III (Group C, Fig. 2) with the association *Solano microphylli-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010. This is a phytocoenosis dominated by *Leptochloopsis virgata* together with a large array of spinescent shrubs and climbing species accompanied by other taxa which make up the dominant climactic vegetation in the territory (*Prosopis julifora, Acacia skleroxila, Senna atomaria*, *S. angustisiliqua* var. *angustisiliqua*, *Guaiacum officinale or Phyllostylon rhamnoides*), all of them highly abundant.

These relevés are mostly located in the Sector Azua-San Juan-Hoya Enriquillo-Port-au-Prince-Artiobonite-Gonaivës, and at a lesser extent in the Bahoruco-Hottensean Sector and in the NW of the Cibao Valley (Caribbean-Cibensean). All these relevés belong to an infratropical thermotype and a dry to semiarid ombrotype, and correspond to light-coloured muddy soils with a low degree of stoniness and a certain amount of anthropozoogenic alteration. In the original description of the community the authors ascribed it only to the Bahoruco-Hottensean sector, but we have extended its distribution area.

Disturbed dry forest with a dominance of Prosopis juliflora in the south of the Dominican Republic (Group D Fig. 2, Table IV).

Nowadays, most of the dry forest of the Dominican Republic which Hager and Zanoni (1993) define as "natural" has been heavily altered particularly by the action of two disturbing agents.

The first agent has been wood extraction for domestic use (charcoal making). This has led to an increase in the presence of succulent species, unsuitable for charcoal making. The second agent has been cattle-raising, mostly in the form of herds of goats. This has brought about the propagation of a wide spectrum of woody Leguminosae.

The tree-like species which characterized the natural dry forest of the climax vegetation in the past, are *Bursera simaruba*, *Phyllostylon rhamnoides*, *Guaiacum officinale*, *G. sanctum*, or even *Capparis cynophallophora* and *Ziziphus rignonii*. These species would make up a phytocoenosis 8-15 m high on average in places with an infratropical to thermotropical thermotype and a semiarid to dry ombrotype.

Disturbing agents have dramatically altered this natural forest and produced a disclimax vegetation dominated by the allochthonous species *Prosopis juliflora* (Roth 1999). Nowadays, these plant species always appear in the samples taken. Their presence depends on the degree of anthropozoogenic changes undergone in each site.

TABLE III

***Solano microphylli-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010.**

Nr. relevé	4	5	6	8	9	15	27	36	37	38	39	43	44
Area (x10m)	50	50	50	25	50	50	50	50	50	50	50	50	50
Cover rate (%)	80	80	60	40	80	75	65	60	80	90	85	90	95
Altitude (x10 masl)	11	11	5	53	53	17	16	16	21	22	12	1	1
Average height (m)	3	3	4	2	4	4	3	5	4	5	5	2	5
Slope (%)	-	5	-	8	10	5	-	20	-	25	-	30	-
Orientation	-	SE	-	S	SW	NE	-	E	-	SE	-	E	-
Characteristics of association:													
Senna atomaria	+	.	.	.	2	1	+	1	2	2	1	.	+
Cissus trifoliata	+	+	+	.	.	.	.	1	2	.	2	+	1
Bastardia viscosa	.	.	.	.	+	+	+	2	1	1	.	.	1
Solanum microphyllum	1	1	.	+	.	.	.	+	1	2	.	.	.
Scolosanthus triacanthus	1	+	.	.	+	.	.	.	.	1	2	2	.
Senna angustisiliqua var. *angustisiliqua*	+	+	.	.	+	.	+	.	.	.	2	1	.
Convolvulus nodiflorus	.	.	+	.	+	.	.	2	2	2	2	.	.
Rochefortia acanthophora	.	+	.	+	+	.	.	.	.	1	1	.	.
Hibiscus brasiliensis	.	.	+	.	.	1	+	1	.	.	.	.	+
Capparis flexuosa	.	.	.	.	.	1	+	1	.	.	.	+	+
Marsdemia linearis	+	+	.	+	.	.	.	.	.	.	.	+	.
Tribulus cistoides	.	.	.	.	.	+	+	2	1	.	.	.	.
Jacquemontia pentantha	+	.	.	.	.	1	1	.	.	.	.	.	.
Casearia comocladifolia	.	.	+	.	.	.	.	.	.	+	1	.	.
Helicteres semitriloba	.	.	.	+	2	.	.	.	.	2	.	.	.
Thouinia trifoliata	.	.	.	+	.	.	.	.	.	2	.	+	.
Characteristics of alliance and order:													
Leptochloopsis virgata	3	5	2	3	2	2	1	1	3	3	2	1	2
Agave antillarum	1	+	1	+	1	1	+	2	2	.	.	1	.
Cylindropuntia caribaea	1	1	+	.	.	2	.	2	2	2	2	.	3
Pictetia sulcata	+	+	.	+	+	.	.	1	.	1	.	+	+
Croton discolor	1	1	+	.	.	.	.	1	.	1	.	2	+
Melocactus lemairei	.	.	1	.	.	+	+	1	.	.	1	2	1
Corchorus hirsutus	1	3	.	1	+	.	.	.	1	.	2	.	.
Lantana camara	.	.	.	.	+	+	.	1	2	2	+	.	.
Turnera diffusa	.	.	.	.	.	+	+	2	2	.	1	2	.
Melochia tomentosa	1	2	.	.	.	+	+	.	.	.	.	.	+
Exostema caribaeum	.	.	.	.	2	.	1	.	1	1	.	.	.
Brya buxifolia	.	.	.	.	.	2	+	1	1	.	.	.	.
Croton poitaei	.	.	.	.	.	+	+	.	.	.	.	3	2
Calliandra pedicellata	.	.	.	2	+	.	+	.	.	.	.	.	.
Exostema spinosum	.	.	.	.	+	.	.	.	.	1	.	1	.
Lantana exarata	.	.	.	.	.	+	+	.	.	.	.	.	+
Characteristics of class:													
Guapira brevipetiolata	1	+	+	.	+	.	.	.	.	.	1	+	+
Crossopetalum decussatum	.	.	.	.	+	+	+	.	.	.	.	.	+
Plumeria subsessilis	.	.	+	.	+	.	.	1	.	.	.	.	.

TABLE III (continuation)

Accompanying species:													
Colubrina elliptica	+	.	+	+	3	1	2	1	+	+	.	.	.
Tillandsia recurvata	+	.	.	+	1	1	.	2	.	2	2	2	+
Phyllostylon rhamnoides	+	.	1	.	.	1	2	2	1	2	.	.	+
Stigmaphyllon emarginatum	+	.	.	.	.	+	1	2	.	2	2	1	1
Consolea moniliformis	+	.	+	.	.	+	.	1	.	1	1	1	+
Pilosocereus polygonus	.	.	2	.	+	+	+	2	3	1	.	.	2
Guaiacum officinale	1	.	+	.	.	.	1	.	+	3	.	+	+
Lemaireocereus hystrix	+	.	.	.	.	1	3	.	2	.	3	1	3
Prosopis juliflora	2	+	2	.	.	2	+	.	.	.	.	.	2
Bursera simaruba	+	.	+	.	+	+	.	1	.	.	.	+	.
Bourreria divaricata	+	+	.	.	.	+	+	2	.	.	.	.	.
Harrisia nashii	+	+	.	.	.	.	.	.	.	.	1	1	+
Maytenus buxifolia	.	.	.	+	+	.	+	1	.	.	.	+	.
Leptocereus paniculatus	.	.	.	.	.	1	+	3	3	.	.	.	3
Jatropha gossypiifolia	+	+	.	.	.	.	.	.	.	1	1	.	.
Acacia skleroxyla	1	.	1	+	.	.	.	.	.	2	.	.	.
Pithecellobium unguis-cati	1	.	.	.	.	+	1	.	.	.	2	.	.
Opuntia cubensis	.	.	.	.	+	+	.	.	.	.	.	1	.
Heliotropium angiospermum	.	.	.	.	.	+	.	1	.	.	.	.	+
Heliotropium curassavicum	.	.	.	.	.	.	.	1	1	1	.	.	.

Sites: (4) NE of naval base La Caldera, 19Q 336488E, 2013979N.(5) NE of naval base La Caldera, 19Q 334988E, 2013849N.(6) El Palmar de Ocoa (Azua), 19Q 341167E, 2016172N. (8) El Palmar de Ocoa (Azua), 19Q 266702E, 2068607N. (9 El Palmar de Ocoa (Azua), 19Q 266702E, 2068607N. (15) Road Azua-Barahona, 19Q 292391E, 2042552N. (27) Road Barahona-Azua, 29 km from Azua, 19Q 295472E, 2042014N. (36) 3 km from Vicente Noble crossroads, 19Q 283638E, 2043825N. (37) Near Fondo Negro, 19Q 275855 E, 2035891 N. (38) Road Azua from Compostela to Baní, 19Q 340420E, 2031565N. (39) Calabaza (Baní), 19Q 353122E, 2025661N. (43) Palo Verde to Villagarcía, 19Q 234199E, 2190923N (44) Between Villa Jaragua and Los Ríos, 19Q 233257E, 2046743N.

When the alteration of natural landscapes is continuous and permanent, original species give way to others such as *Prosopis juliflora* and *Acacia macracantha*. *Acacia skleroxyla* and the small-sized Caesalpiniaceae *Senna atomaria* and *S. angustisiliqua* var. *angustisiliqua* are also relatively frequent.

Table IV shows eleven relevés which correspond to Group D in Fig. 2. All samples were taken in the territories in the south of the Dominican Republic, particularly in the Sector Azua-San Juan-Hoya Enriquillo-Port-au-Prince-Artiobonite-Gonaivës. This territory has an infratropical dry bioclimatic belt. In our cluster analysis (Fig. 3) this association is located in the central part, to the right in the diagram. The samples are more scattered to the right, as the presence index of the characteristic species decreases, as in relevés 7, 12, 30-32.

The soil where this association grows tends to be stony, with gentle slopes and with little water retentive capacity. During the months of very little rainfall, these facts enhance the aridity of the terrain. All these environmental agents have an impact on the vegetation. Not surprisingly, the average cover rate of this plant association never exceeds 85% and the average height of the vegetation ranges between 5 and 6 m. There is also a high percentage of deciduous plants and an abundance of climber species and small-sized spinescent shrubs.

As for the floristic composition of this plant formation, *Prosopis juliflora* is dominant in heavily altered biotopes. The greater the anthropozoogenic alteration of habitats, the greater the abundance rate of this taxon. However, *Phyllostylon rhamnoides*, *Guaiacum officinale*, *Bursera simaruba* or *Ziziphus rignonii* appear, to a greater or lesser extent, in most of the samples as vestiges of the original climactic vegetation.

The occurrence of Cactaceae such as *Lemaireocereus hystrix*, *Harrisia nashii*, *Opuntia cubensis* or *Consolea moniliformis* testify to the aridity of the sites. In addition, these species have benefitted from charcoal making activities to the detriment of woody species.

We have given the name *Phyllostylo rhamnoidis-Prosopidetum juliflorae ass. nova* (Table IV, *typus* rel. 14) to this formation and included it in the class *Cercidio-Prosopidetea* Borhidi 1996.

When this plant association disappears, the soil becomes heavily eroded and then the only contact formation that thrives is *Solano microphylli-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010.

TABLE IV

Phyllostylo rhamnoidis-Prosopidetum juliflorae ass. nova.

Nr. relevé	7	10	11	12	13	14	28	29	30	31	32
Area (x 10m^2)	50	50	50	50	50	50	50	50	50	50	50
Cover rate (%)	85	75	75	75	80	70	80	85	85	75	75
Altitude (10x masl)	56	36	38	42	34	30	22	21	17	0.3	12
Average height (m)	4	4	5	7	4	4	5	7	8	4	3
Slope (%)	12	-	15	15	5	5	-	-	-	-	-
Orientation	SW	-	NE	S	SE	NE	-	-	-	-	-
Characteristics of association:											
Senna atomaria	2	+	+	3	.	1	+	+	+	+	+
Senna angustisiliqua var. *angustisiliqua*	+	.	+	+	1	+	2	3	1	+	1
Tillandsia recurvata	1	2	1	2	1	1	+	+	+	.	.
Lemaireocereus hystrix	.	1	+	+	3	2	+	+	+	.	.
Phyllostylon rhamnoides	+	2	4	1	+	3	.	.	1	.	.
Guaiacum officinale	1	.	1	1	.	1	1	1	1	.	.
Opuntia cubensis	.	+	+	.	+	+	+	+	+	.	.
Harrisia nashii	.	+	.	+	+	+	+	.	+	+	.
Bursera simaruba	+	.	.	1	.	+	1	.	1	+	.
Consolea moniliformis	.	+	.	+	+	+	+	.	+	.	.
Pilosocereus polygonus	+	.	.	+	.	2	.	.	.	+	.
Cylindropuntia caribaea	.	1	.	+	+	+	.	.	.	.	.
Agave antillarum	.	.	1	1	2	.	1	.	.	.	.
Colubrina elliptica	1	.	.	4	.	.	.	.	2	.	.
Helicteres semitriloba	+	.	.	.	.	.	1	.	.	.	3
Pithecellobium unguis-cati	3	1	.	.	.	+	.	.	.	.	.
Guaiacum sanctum	+	.	.	.	.	.	.	.	.	1	1
Ziziphus rignonii	.	.	.	.	.	.	.	4	1	3	.
Opuntia caribaea	.	.	.	.	.	.	.	+	+	+	.
Maytenus buxifolia	.	.	.	.	.	+	.	.	.	.	+
Characteristics of alliance and order:											
Acacia macracantha	2	+	+	.	+	3	.	.	1	1	.
Capparis ferruginea	+	.	.	+	.	+	.	.	.	+	1
Capparis flexuosa	+	+	+	.	.	+	.	.	.	+	.
Capparis cynophallophora	+	+	.	+	.	.	.	.	+	.	.
Acacia skleroxyla	+	.	.	2	.	.	.	.	4	.	.

TABLE IV (continuation)

Characteristics of class:											
Prosopis juliflora	1	3	2	1	4	2	2	2	1	1	2
Accompanying species:											
Bunchosia glandulosa	+	+	.	+	+	+	.	+	1	1	1
Randia aculeata	+	.	+	.	+	+	.	.	+	+	1
Melochia tomentosa	.	+	+	+	+	+	.	.	+	+	.
Plumeria obtusa	+	+	+	.	+	.	+	.	.	.	+
Cordia polycephala	+	.	.	+	+	+	.	.	+	+	.
Adelia ricinella	+	+	+	1	.	+	.	.	.	.	.
Stigmaphyllon emarginatum	+	+	.	.	+	.	.	.	+	+	.
Serjania sinuata	+	.	.	.	+	+	.	.	+	.	+
Cissus trifoliata	+	.	.	.	.	.	.	+	+	+	+
Distictis lactiflora	.	+	+	+	.	.	.	.	+	.	+
Lantana camara	.	.	+	.	+	.	+	+	+	.	.
Rochefortia acanthophora	+	+	.	.	+	+	.	.	.	.	.
Malpighia cnide	+	.	+	.	+	.	.	.	+	.	.
Exostema caribaeum	1	.	.	+	.	.	.	.	1	.	1
Croton corylifolius	+	.	.	+	.	+	.	1	.	.	.
Pictetia sulcata	+	.	.	.	+	.	+	.	.	.	+
Bourreria divaricata	+	.	.	.	.	+	+	.	+	.	.
Bastardia viscosa	.	1	1	.	.	1	+	.	.	.	.
Convolvulus nodiflorus	.	.	.	.	1	.	.	+	+	.	+
Jacquemontia pentantha	.	.	.	.	.	+	+	+	.	+	.
Boerhavia scandens	.	.	.	.	.	.	.	+	+	+	+
Gouania polygama	+	.	+	+	.	.	.	.	.	.	.
Serjania polyphylla	+	.	+	+	.	.	.	.	.	.	.
Croton oreganifolius	+	.	+	.	+	.	.	.	.	.	.
Tillandsia fasciculata	+	.	.	+	+	.	.	.	.	.	.
Eugenia rhombea	1	.	.	+	.	+	.	.	.	.	.
Acaplypha cuspidata	+	.	.	+	.	+	.	.	.	.	.
Macfadyena unguis-cati	+	.	.	.	+	+	.	.	.	.	.
Aspidosperma cuspa	.	.	+	1	.	.	.	+	.	.	.
Hibiscus brasiliensis	.	.	+	+	.	.	.	.	.	.	1
Catesbaea fuertesii	.	.	+	.	+	+	.	.	.	.	.
Turnera diffusa	.	.	+	.	1	.	1	.	.	.	.
Centrosema virginianum	.	.	.	+	.	.	+	.	+	.	.
Guapira brevipetiolata	.	.	.	+	.	.	.	.	.	1	1
Lonchocarpus neurophyllus	1	.	.	.	.	+	.	.	.	.	.
Vanilla barbellata	1	.	.	.	.	+	.	.	.	.	.
Tillandsia usneoides	.	.	.	2	+	.	.	.	.	.	.
Ximenia americana	.	.	.	.	.	.	+	.	.	.	+

Sites: (7) Near Sierra Neiba and San Juan (Vallejuelo), slope up to the repeater, 19Q 266954E, 2068940N. (10) Between Salinas (Valle de San Juan) and Azua, 19Q 280369E, 2069950N. (11) Sabana Yegua reservoir, 19Q 282460E, 2069649N. (12) Sabana Yegua reservoir, 19Q 283499E, 2069664N. (13) Near Sabana Yegua reservoir, 19Q 282006E, 2067957N. (14) Near La Guanábana, San Juan-Azua road, 19Q 294970E, 2055131N. (15) Azua-Barahona road, 19Q 292391E, 2042552N. (28) Orégano Chiquito (Tabara, Azua), 19 Q 299063E, 2048784N. (29) Cañada Cimarrona (Azua), 19Q 331700E, 2044339N. (30) La Montería (Baní), 19Q 356779E, 2026731N. (31) Barrera (Azua), 19Q 302429E, 2026213N. (32) 3 km to the E of Barrera (Azua), 19Q 299994E, 2027837N.

Dry forest on hard (dog-tooth) limestones (Group F, Fig. 2, Table V)

This community was recorded by Hager and Zanoni (1993) who describe it as a special case of "dry forest in the Barahona peninsula" with a high degree of endemicity. Table V shows a group of 11 relevés which correspond to Group F in Fig. 2. In the analysis of Fig. 3 this group is located in the upper right quadrant.

The samples show a forest that never exceeds 10 m of average height with low vegetation cover rate (below 50-60%). Soil-induced xericity conditions and poor rainfall records have given rise to a high abundance of Cactaceae. The endemicity rate is also high, with species such as *Cameraria linearifolia, Harrisia nashii*, *Melocactus pedernalensis*, *Haitiella ekmanii* and *Lonchocarpus pycnophyllus*. These endemic taxa, together with *Consolea moniliformis*, make up the characteristic species of this community.

In association with the previous species, there are other plants which testify to fairly unaltered dry forest. This is the case of the species already mentioned for the last community we described. As can be seen in Fig. 3, relevés 16, 18, 25, 33 and 35 are slightly displaced from their group and tend, to some extent, to move towards the contiguous group, which belongs to the *Phyllostylo-Prosopidetum* association. The abundance of *Phyllostylon rhamnoides*, *Guaiacum sanctum*, *G. officinale* and *Bursera simaruba* in these relevés accounts for this displacement.

The scant or null presence of *Prosopis juliflora* and *Acacia macracantha* in most of the samples is also noticeable. Another feature of this plant community is the existence of numerous climber plants, such as *Stigmaphyllon emarginatum*, *Galactia dictyophylla*, *Convolvulus nodiflorus*, *Serjania polyphylla* or *Cissus trifoliata.*

This plant association has only been recorded in the SW of the Barahona Peninsula and only in biotopes where the soil is made up of hard "dog-tooth" limestone. Under the dominance of a Tropical Xeric bioclimate (upper infratropical thermotype and dry to lower semiarid ombrotype), the annual rainfall of this area is very low, ranging from 600 to 800 mm (Cano et al. 2012).

We propose this plant community as a new association with the name of *Consoleo moniliformis-Camerarietum linearifoliae ass. nova* (Table V, *typus* rel. 22). We believe this xerophytic plant association, under the clear dominance of Cactaceae species, should be included in the class *Cercidio-Cereetea* Borhidi 1996. This is an azonal plant formation which has no successional dynamics and whose only catenal contact is with the graminoid formations of *Leptochloopsis virgata* on conglomerate soils and undifferentiated Quaternary deposits.

TABLE V

Consoleo moniliformis-Camerarietum linearifoliae ass. nova.

Nr. relevé	16	17	18	21	22	24	25	26	33	34	35
Area (x 10m^2)	50	50	50	50	50	50	50	50	50	50	50
Cover rate (%)	60	65	45	45	55	30	75	55	60	50	50
Altitude (10x masl)	0.7	22	1.3	3	4.3	3.5	11	20	15	11	15
Average height (m)	4	3.5	3	2	2.5	3	6	3.5	6	6	9
Slope (%)	-	10	-	-	-	-	-	15	-	-	-
Orientation	-	SE	-	-	-	-	-	SW	-	-	-
Characteristics of association:											
Serjania polyphylla	+	+	+	+	+	+	+	+	1	1	1
Cameraria linearifolia	1	1	+	.	2	.	2	+	2	2	2
Thouinidium inaequilaterum	2	1	1	.	+	1	+	1	.	1	1

TABLE V (continuation)

Characteristics of association:											
Harrisia nashii	+	.	+	+	+	+	1	.	2	1	+
Galactia dictyophylla	+	+	.	+	+	+	+	+	1	1	.
Cissus trifoliata	.	.	+	+	+	+	+	+	2	2	2
Phyllostylon rhamnoides	3	1	1	.	.	.	3	1	3	2	2
Stigmaphyllon emarginatum	+	+	.	.	1	1	.	+	2	2	2
Bursera spinescens	+	1	.	+	1	.	.	1	.	2	2
Senna atomaria	+	+	.	.	+	.	+	+	2	2	.
Colubrina elliptica	+	+	.	.	+	.	+	.	2	2	2
Comocladia dodonaea	+	1	.	+	+	+	.	+	.	.	.
Catalpa macrocarpa	+	+	.	+	1	+	.	.	.	.	+
Pentalinon luteum	.	.	+	+	+	.	.	+	.	1	2
Convolvulus nodiflorus	+	+	.	.	.	.	.	.	2	1	1
Mammillaria prolifera subsp. *prolifera*	+	.	+	.	.	.	.	+	1	.	1
Echites umbellata	.	.	+	+	+	+	.	+	.	.	.
Rhynchosia reticulata	.	1	.	.	.	.	.	.	2	2	2
Cissampelos pareira	+	+	.	.	.	.	.	.	1	.	.
Cissus verticillata	+	.	.	.	.	.	+	.	1	.	.
Cylindropuntia caribaea	.	.	.	+	.	.	+	.	2	.	.
Haitiella ekmanii	.	.	.	.	+	2	.	3	.	.	.
Characteristics of alliance and order:											
Consolea moniliformis	+	+	+	2	3	1	1	1	3	2	2
Pilosocereus polygonus	+	1	+	+	+	+	.	+	2	2	2
Guaiacum officinale	+	+	+	+	+	.	1	.	.	.	1
Agave antillarum	.	1	.	+	+	+	.	+	2	2	.
Capparis cynophallophora	+	+	+	+	+	+	.	+	.	.	.
Capparis flexuosa	+	.	+	.	.	.	+	.	2	2	2
Croton ciliato-glanduliferus	.	+	.	+	1	+	.	.	.	1	.
Capparis ferruginea	+	.	1	.	.	.	1	+	.	.	.
Croton discolor	.	.	1	+	.	.	+	.	.	.	2
Melocactus pedernalensis	.	.	1	.	+	+	.	.	.	.	1
Opuntia cubensis	+	.	+	.	.	.	+	.	.	.	.
Characreristics of class:											
Lemaireocereus hystrix	1	+	+	+	1	1	1	+	2	2	2
Accompanying species:											
Plumeria obtusa	+	+	.	+	+	1	.	+	2	2	1
Bursera simaruba	+	+	.	.	+	.	1	+	3	1	.
Cordia salvifolia	+	1	1	.	+	.	.	+	.	2	1
Melochia tomentosa	+	+	.	1	1	+	.	.	.	2	2
Corchorus hirsutus	+	.	+	+	+	+	.	.	2	1	.
Exostema caribaeum	.	+	+	.	.	+	+	+	1	1	.
Lonchocarpus pycnophyllus	.	.	.	2	2	.	1	.	2	1	2
Senna angustisiliqua var. *angustisiliqua*	.	+	.	.	.	.	+	.	2	1	1
Tillandsia recurvata	1	1	+	.	.	.	.	1	2	.	.
Pithecellobium unguis-cati	+	.	+	+	.	+	+	.	.	.	.
Acacia skleroxyla	1	.	+	.	.	.	2	.	1	.	.
Guaiacum sanctum	+	2	.	.	.	2	.	1	.	.	.
Hibiscus brasiliensis	+	+	.	.	.	.	+	.	1	.	.
Samyda dodecandra	+	+	.	.	.	.	1	.	1	.	.
Centrosema virginianum	.	+	.	+	1	.	+	.	.	.	.
Annona bicolor	.	.	.	.	+	.	.	+	1	1	.

TABLE V (continuation)

Accompanying species:											
Acacia macracantha	+	.	.	.	.	.	+	.	.	1	.
Adelia ricinella	+	.	.	.	.	.	+	.	1	.	.
Thouinia domingensis	.	3	.	.	.	.	.	.	.	1	1
Caesalpinia brasiliensis	.	+	.	.	+	+	.	.	.	.	.
Reynosia uncinata	.	+	.	1	+	.	.	.	.	.	.
Jacquinia arborea	.	.	+	.	+	+	.	.	.	.	.
Petitia domingensis	.	.	.	+	+	+	.	.	.	.	.
Tournefortia stenophylla	.	.	.	1	1	+	.	.	.	.	+
Lonchocarpus neurophyllus	.	.	1	+	.	.	1	.	.	.	.
Prosopis juliflora	.	.	+	.	.	.	+	+	.	.	.
Lantana exarata	.	.	.	1	.	.	.	.	2	.	1
Coeloneuron ferrugineum	.	.	.	.	.	.	1	.	1	1	.
Comocladia dentata	.	.	.	.	.	.	.	.	1	1	1
Jatropha gossypiifolia	.	.	.	.	.	.	.	.	1	+	+

Sites: (16) Oviedo-Pedernales road, 19Q 234244E, 1983070N. (17) Oviedo-Pedernales road, 19Q 228914E, 1984348N. (18) 9 km from Pedernales, 19Q 216129E, 1992104N. (21) Road to Bahía de las Águilas, 19Q 219890E, 1977236N. (22) Bahía de las Águilas (Pedernales), 19Q 220416E, 1976285N. (24) Bahía de las Águilas (Pedernales), 19Q 220572E, 1975877N. (25) Exit from Pedernales to International road, 19Q 210484E, 2002004N. (26) Exit from Pedernales to Barahona. La Huerta del Guano, 19Q 226876E, 1984849N (33) Road to Aceitillar km. 13, 19Q 219951E, 1995921N. (34) Road to Aceitillar km 10, 19Q 219738E, 1993286N . (35) Road to Aceitillar, near the crossroads of Pedernales, 19Q 219323E, 1990191N.

Disturbed dry forest with the domain of Prosopis juliflora in the north of the Dominican Republic. (Group G, Fig. 2, Table VI)

This is altered dry forest, with an average height of 4 to 6 m, high cover rate and an abundance of *Prosopis juliflora*.

This plant association is located mainly in the Caribbean-Cibensean Sector, where its presence is more apparent in the western part as xericity increases. It is very well represented in the Morro de Montecristi, a territory with an infratropical thermotype and a semiarid ombrotype (optimum) but it can also occur under the dominance of a dry ombrotype.

The association grows on finely-textured soils, with scant or null stoniness basically made up of fill materials from the basin of Cibao Valley. The average cover rate of this dry forest ranges from 75 to 80% which is higher than the cover rate corresponding to the community of *Prosopis juliflora* in the south of the Dominican Republic.

The dominant species (Table VI) are *Prosopis juliflora* and *Phyllostylon rhamnoides*. As in the case of the community of *Phyllostylo rhamnoidis-Prosopidetum juliflorae*, both species alternate depending on the degree of alteration of the community. *Guaiacum officinale* also appears as a residual species peculiar to fairly unaltered dry forests. In Fig. 3 both associations appear in the central part of the PCoA diagram, very close to each other. This is no surprise, since they have some characteristic species in common.

In this new phytocoenosis we have not found the presence of species such as *Acacia macracantha*, *A. skleroxyla*, *Ziziphus rignonii*, *Senna atomaria*, *S. angustisiliqua* var. *angustisiliqua* or *Agave antillarum*. All of them are characteristic species of the association *Phyllostylo-Prosopidetum juliflorae*.

On the other hand, the constant and high abundance of Cactaceae is another major floristic difference between the association described for the Sector Azua-San Juan-Hoya Enriquillo-Port-

au-Prince-Artiobonite-Gonaivës, and this new association. Particularly noticeable are the cases of *Lemaireocereus hystrix*, together with *Harrisia nashii*, *Mammillaria prolifera* subsp. *prolifera*, *Pilosocereus polygonus*, *Opuntia cubensis*, *Consolea moniliformis* or *Cylindropuntia caribaea*.

The high abundance rates of small-sized species, such as *Croton discolor* and *Caesalpinia coriaria*, or, among the lianoid plants, of *Stigmaphyllon emarginatum*, *Convolvulus nodiflorus* or *Cissus trifoliata*, are particularly noticeable in this association. The presence of *Leptochloopsis virgata* is also striking, since it makes catenal contact with the association *Crotono-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010. As we said when commenting on the associations dominated by savannah-like Gramineae, we must emphasize that the endemic taxa *Croton astrophorus*, exclusive to the north of the country, occurs mostly in combination with the forest community, not with the graminoid formations of *Leptochloopsis virgata*. It is worth mentioning the presence of the taxon *Lycium americanum* in biotopes near the coast where temporary sea water flooding occurs. This plant appears in four of the relevés in Table VI.

In the work of Hager and Zanoni (1993) this association is identified with the so-called "Disturbed Cactaceae forest". However, we do not agree with these authors since they include all the formations rich in Cactaceae and *Prosopis juliflora*, both in the north and the south (Barahona, Enriquillo, Azua or Baní), in this generic description. Our disagreement relies on confirmed floristic differences.

As a result, we call this new plant association, peculiar to the Caribbean-Cibensean Sector, in an infratropical, semiarid or dry bioclimatic belt, *Lemaireocereo hystricis-Prosopidetum juliflorae ass. nova* (Table VI, *typus* rel. 41). We include it in the *Cericidio-Prosopidetea* class because its overall physiognomy corresponds to dry Cactaceae forest with phreatophytes. As with the association peculiar to the south of the Dominican Republic, the abundant occurrence of species belonging to the *Cactaceae* family is due to two factors. The first one is xericity. The second one is continuous anthropozoogenic action, which together with the progressive disappearance of woody species, favours the cacti.

TABLE VI

Lemaireocereo hystricis-Prosopidetum juliflorae ass. nova.

Nr. relevé	40	41	45	46	47	48	49	50	51	52	53
Area (m^2)	500	500	500	500	500	500	500	500	500	500	500
Cover rate (%)	60	90	75	80	50	70	85	75	100	70	65
Altitude (masl)	84	20	47	83	140	163	170	160	160	94	120
Average height (m)	4	4	3.5	4.5	4.5	4.5	6	6.5	6	4.5	6.5
Slope (%)	-	-	-	-	-	-	-	-	-	-	-
Orientation	-	-	-	-	-	-	-	-	-	-	-
Characteristics of association:											
Lemaireocereus hystrix	3	3	3	4	2	3	4	3	5	3	3
Tillandsia recurvata	1	2	+	2	1	2	1	2	1	2	2
Consolea moniliformis	+	+	1	+	1	1	2	1	1	1	.
Harrisia nashii	1	+	1	1	2	1	1	1	2	.	1
Opuntia cubensis	+	1	1	1	1	1	1	.	1	1	1
Phyllostylon rhamnoides	2	2	.	1	1	2	+	+	.	3	2
Pilosocereus polygonus	+	3	.	.	2	2	2	.	2	2	2
Mammillaria prolifera subsp. *prolifera*	1	2	2	1	.	.	1	.	2	.	1

TABLE VI (continuation)

Characteristics of association:											
Callisia repens	.	.	+	1	+	.	.	1	1	2	1
Guaiacum officinale	.	.	+	+	1	2	.	+	.	2	1
Cylindropuntia caribaea	.	.	2	2	.	.	1	3	2	.	.
Characteristics of alliance and order:											
Caesalpinia coriaria	.	3	+	+	+	.	.	.	.	2	1
Characteristics of class:											
Prosopis juliflora	3	3	3	.	2	3	3	3	2	1	2

Accompanying species: *Croton astrophorus*: 2 in 41, 2 in 46, 2 in 47, 1 in 48, 2 in 52, 1 in 53; *Bastardia viscosa:* 1 in 40, + in 46, 1 in 51; *Brya buxifolia:* 1 in 40; *Boerhavia scandens:* 1 in 40, + in 41, 2 in 45, 2 in 50; *Stigmaphyllon emarginatum:* + in 40, + in 41, 2 in 45, 2 in 46, + in 47, + in 48, 2 in 49, 2 in 50, 2 in 51, 1 in 52, 1 in 53; *Leptochloopsis virgata:* + in 40, + in 41, + in 46, + in 47, 1 in 49, 1 in 51, 1 in 52, 1 in 53; *Cissus trifoliata:* + in 40, 1 in 41, 2 in 45, + in 47, 2 in 49, 2 in 50, + in 53; *Ruellia tuberosa:* + in 40, 1 in 46, 1 in 51, 1 in 52; *Lycium americanum:* + in 40, 1 in 41, 2 in 49, 2 in 51; *Pictetia sulcata:* + in 41, + in 46, 1 in 47, + in 52, 1 in 53; *Kalanchöe tubiflora:* 2 in 45, 2 in 46, 2 in 47; *Croton oreganifolius:* 1 in 45, + in 47, + in 48, 2 in 49; *Randia aculeata:* + in 45, + in 46, + in 47, + in 48, 1 in 52, 1 in 53; *Hibiscus brasiliensis:* + in 45, + in 48, + in 53; *Serjania sinuata:* + in 45, 2 in 48, + in 50; *Distictis lactiflora:* 2 in 46, 1 in 47, 1 in 50; *Melochia tomentosa:* 2 in 46, 1 in 47, + in 52; *Centrosema virginianum:* + in 46, + in 48, + in 52; *Convolvulus nodiflorus:* + in 46, + in 47, 2 in 48, + in 49, + in 52, + in 53; *Pithecellobium circinale:* + in 48, + in 52, 1 in 53.

Sites: (40) Doña Antonia, 19Q 267385E, 2176805N. (41) 10 km from Montecristi, 19Q 228891E, 2192923N. (45) Jaibón (Valle Cibao), 19Q 272603E, 2176209N. (46) Jaibón, 19Q 273593E, 2176232N. (47) Jaibón, 2 km from Santiago-Montecristi road, 19Q 273241E, 2177242N. (48) Jaibón, 4 km from Santiago-Montecristi road, 19Q 273458E, 2178554N. (49) Doña Antonia (Montecristi), 19Q 267694E, 2177030N. (50) Doña Antonia (Montecristi), La Guajaca, 19Q 265559E, 2177065N. (51) La Guajaca (Montecristi), 19Q 265579E, 2177120N. (52) On the way to Punta Rusia, Km 4, 19Q 262945E, 2180708N (53) Punta Rusia; 19Q 262882E, 2181400N.

Disturbed dry forest with a domain of Prosopis juliflora on saline soils (Group H, Fig. 2, Table VII)

In coastal biotopes, near areas affected by sea water flooding and in contact with button mangrove (*Conocarpus erectus*) formations (*Laguncularia racemosae-Conocarpetum erecti* Peinado, Alcaraz & Delgadillo 1995) we find disturbed dry forest with little diversity and some species peculiar to salt marshes.

This group of five relevés is clearly distinguishable in the left-hand corner of the Principal Coordinate Analysis in Fig. 3. Physiognomically, this forest is a phytocoenosis dominated basically by *Prosopis juliflora*, a fact that reveals the alteration of the original dry forest. A number of Cactaceae can be found together with this phreatophyte. *Lemaireocereus histrix* exhibits high abundance rates and can continue to flourish under conditions of high salinity. All the relevés conducted revealed the presence of dying specimens and dead remnants of individuals, in correlation with the frequency and duration of sea water floods and the presence of salt in the soil. Other Cactaceae, such as *Pilosocereus polygonus*, *Consolea moniliformis*, *Harrisia nashii*, *Opuntia cubensis* and *O. dillenii* are less resistant to sea water flooding and soil salinization.

The presence of *Lycium americanum* and *Sesuvium portulacastrum*, which are both salt-tolerant taxa, is particularly noticeable. Likewise, the presence in some relevés of *Heterostachys*

ritteriana, testifies to catenal contact with typically halophilous phytocoenoses. The rest of the species are widely distributed and are made of eurioic spontaneous grasses and some climber plants.

We have found this plant association only near the sea and in the salt marshes of Montecristi. However, no occurrence was recorded in salt marshes located in Lago Enriquillo, Valle de San Juan-Azua or Barahona, in the south of the Dominican Republic. The association occurs with an upper infratropical thermotype and a lower semiarid or dry ombrotype (Cano et al. 2012) under a Tropical Xeric bioclimate (Bixeric variant), with 7-9 months of drought and annual rainfall below 800 mm.

The association was recorded by Hager and Zanoni (1993) in their study of the vegetation of marshy plateaus. They mention the association related to slightly elevated areas prone to temporary sea water flooding. We call it *Lycio americani-Prosopidetum juliflorae ass. nova* (Table VII, *typus* rel. 68) and include it in the *Acacio-Caesalpinion* alliance, since the dominant presence of the phreatophyte *Prosopis juliflora* is particularly noticeable.

TABLE VII
Lycio americani-Prosopidetum juliflorae ass. nova.

Nr. relevé	42	66	67	68	69
Area (x 10m^2)	50	50	50	50	50
Cover rate (%)	90	70	70	90	80
Altitude (masl)	7	2	1	5	4
Average height (m)	5	4	3.5	4	4
Slope (%)	-	-	-	-	-
Orientation	-	-	-	-	-
Characteristics of association:					
Lycium americanum	3	2	2	3	3
Lemaireocereus hystrix	4	3	3	3	3
Tillandsia recurvata	3	1	+	1	1
Sesuvium portulacastrum	2	2	1	2	3
Harrisia nashii	+	+	1	+	+
Consolea moniliformis	1	+	+	.	+
Opuntia cubensis	+	+	.	.	+
Opuntia dillenii	+	+	.	.	+
Heterostachys ritteriana	.	.	+	1	+
Pilosocereus polygonus	1	+	.	.	.
Characteristics of alliance and order:					
Capparis cynophallophora	.	.	.	.	1
Characteristics of class:					
Prosopis juliflora	3	3	3	2	2

Accompanying species: *Boerhavia scandens:* 2 in 42, 1 in 66; *Cissus trifoliata:* 2 in 42, 1 in 66; *Bastardia viscosa:* 1 in 42; *Ruellia tuberosa:* 1 in 42, + in 66; *Stigmaphyllon emarginatum:* 1 in 42; *Callisia repens:* 1 in 66.

Sites: (42) Montecristi, 19Q 220785E, 2188049N. (66) Los Conucos (Montecristi), 19Q 218644E, 2183154N. (67) Near Copey in direction of Montecristi, 19Q 219294E, 2180271N. (68) Road to La Ochenta (Montecristi), 19Q 216442E, 2186174N. (69) At the end of the road to La Ochenta (Montecristi), 19Q 216442E, 2186173N.

Dry forest on flat-topped hillocks in Montecristi (Group E, Fig. 2, Table VIII)

This is a type of dry forest recorded only in the vicinity of the Morro de Montecristi National Park, between the Cordillera Septentrional and Cibao Valley. This forest occurs on limestone hills in the form of truncated cones. The scanty soil available and its very nature, of karstic origin, usually induce adaptations in the vegetation and give rise to the dominance of dry forest in these terrains.

The phytocoenosis is 3 to 6 m high on average and the cover rate is 60-80%. The dominant bioclimatic belt in this area is infratropical semiarid, with low rainfall rates and a Tropical Xeric (Bixeric) bioclimate (Cano et al. 2012).

In particular, this forest is dominated by *Guapira discolor* and *Guettarda elliptica*, together with other species peculiar to dry forest, such as *Erythroxylum rotundifolium*, *Colubrina elliptica*, *Maytenus buxifolia* and *Bourreria ovata*. Furthermore, *Prosopis juliflora* can appear in altered areas.

The accompanying scrub tends to be made up of species such as *Pictetia sulcata*, *Randia aculeata, Gochnatia microcephala* var. *buchii* and *Croton poitaei* together with *Leptochloopsis virgata*. Aridity gives rise to a high abundance of *Consolea moniliformis*, *Pilosocereus polygonus* and *Mammillaria prolifera* subsp. *prolifera*.

The usual catenal contact of this association is the phytocoenosis *Crotono astrophori-Leptochloopsietum virgatae* Cano, Veloz & Cano-Ortiz 2010.

The samples of this association are located in the lower right corner of the diagram of Fig. 3, near those of the association *Lemaireocereo-Prosopidetum juliflorae*. Both associations occur in the NW of the Dominican Republic. In the PCoA, the relevé 61 is separated from the rest of its group due to the sparse presence of characteristic species of its association.

We call this new association *Guettardo ellipticae-Guapiretum discoloris ass. nova* (Table VIII, *typus* rel. 60) and include it in the class *Coccothrino-Plumerietea* Borhidi 1996, within the alliance *Pseudocarpidio-Guettardion* Borhidi & Muñiz *in* Borhidi 1996.

TABLE VIII

Guettardo ellipticae-Guapiretum discoloris ass. nova.

Nr. relevé	54	55	58	60	61	62
Area (x 10m^2)	50	50	50	50	50	50
Cover rate (%)	60	70	80	80	80	80
Altitude (masl)	16	20	21	27	70	53
Average height (m)	3	3	4	4.5	6	4
Slope (%)	-	-	-	-	-	-
Orientation	-	-	-	-	-	-
Characteristics of association:						
Guapira discolor	3	+	1	4	1	.
Guettarda elliptica	1	2	2	2	.	1
Maytenus buxifolia	2	2	3	1	.	1
Bourreria ovata	2	+	2	2	.	.
Colubrina elliptica	.	3	1	2	.	1
Pilosocereus polygonus	.	+	.	1	1	+
Zanthoxylum elephantiasis	1	+	1	.	.	.
Ziziphus rhodoxylon	+	+	1	.	.	.
Mammillaria prolifera subsp. *prolifera*	.	+	.	.	2	2
Consolea moniliformis	.	.	.	1	1	1

TABLE VIII (continuation)

Characteristics of alliance and order:						
Guaiacum officinale	+	1	.	1	1	1
Pictetia sulcata	2	+	+	.	1	.
Exostema caribaeum	1	2	+	.	.	1
Croton poitaei	2	.	2	1	.	.
Randia aculeata	2	.	2	.	1	.
Characteristics of class:						
Erythroxylum rotundifolium	3	3	3	1	3	2
Plumeria obtusa	+	.	+	+	+	+

Accompanying species: *Scolosanthus triacanthus:* 2 in 54, 3 in 55, 1 in 58; *Leptochloopsis virgata:* 2 in 54, 2 in 55, 1 in 58, 1 in 60; *Brya buxifolia:* 2 in 54, 1 in 55, + in 58, 2 in 62; *Gochnatia microcephala* var. *buchii:* 2 in 54, 3 in 55, 1 in 62; *Caesalpinia buchii:* 1 in 54, 3 in 55, 3 in 60; *Erithalis fruticosa:* 1 in 54, + in 55, 1 in 58, + in 60; *Lantana leonardorum:* + in 54, + in 55, + in 61; *Stigmaphyllon emarginatum:* + in 54, + in 55, 1 in 60, 1 in 61, 2 in 62; *Convolvulus nodiflorus:* 2 in 55, 2 in 61, 1 in 62. *Jacquemontia havanensis:* + in 55, 1 in 58, + in 60; *Harrisia nashii:* + in 55, + in 58, 1 in 60, 1 in 61; *Tillandsia recurvata:* + in 55, + in 60, 1 in 61, 1 in 62; *Amyris elemifera:* + in 58, + in 60, 1 in 61, + in 62; *Senna angustisiliqua* var. *angustisiliqua:* 2 in 60, 4 in 61, 4 in 62; *Eugenia rhombea:* 2 in 60, + in 61, 1 in 62; *Capparis indica:* 1 in 60, + in 61, + in 62; *Adelia ricinella:* + in 60, 1 in 61, 1 in 62; *Bursera simaruba:* + in 54, + in 55, 1 in 60, 1 in 62; *Prosopis juliflora:* 1 in 55, + in 58, + in 61, 1 in 62.

Sites: (54) Morro Montecristi, 19Q 0222565E, 2200698N. (55) Morro Montecristi, 19Q 0222610E, 2200836N. (58) Morro Montecristi, 19Q 0223543E, 2201543N. (60) Punta Mangle, NW Septentrional range, km. 27, 19Q 0238370E, 2202751N. (61) Old road Montecristi-Puerto Plata, km. 19, 19Q 0235750E, 2201393N. (62) Old road Montecristi-Puerto Plata, km. 17, 19Q 0234500E, 2201316N.

CONCLUSIONS

To sum up, below we give a syntaxonomical scheme which summarizes the range of dry forest associations recorded in the Dominican Republic. The scheme includes our proposal of six new associations for science.

Syntaxonomical Scheme

+CERCIDIO-PROSOPIDETEA Borhidi 1996
**Acacio-Capparidetalia* Borhidi 1996
-Acacio-Caesalpinion coriariae Borhidi 1996
[Forests and thorny scrub of phreatophytes in arid and hyperarid coastal and subcoastal areas in the Antilles and the Bahamas]

Simaroubetum berteroani ass. nova

Phyllostylo rhamnoidis-Prosopidetum juliflorae ass. nova

Lemaireocereo hystricis-Prosopidetum juliflorae ass. nova

Lycio americani-Prosopidetum juliflorae ass. nova

+COCCOTHRINO-PLUMERIETEA Borhidi 1996
**Lantano-Cordietalia* Borhidi 1996
-Pseudocarpidio-Guettardion Borhidi & Muñiz in Borhidi 1996
[Basophilous coastal scrub with abundant thorny elements, most of them Cactaceae]

Guettardo ellipticae-Guapiretum discoloris ass. nova

-*Crotono poitaei-Leptochloopsion virgatae* Cano, Veloz & Cano-Ortiz 2010
[Hemicryptophytic communities dominated by *Leptochloopsis virgata* in the Dominican Republic and Haiti]

Melocacto pedernalensis-Leptochloopsietum virgatae Cano, Veloz & Cano-Ortiz 2010
Crotono astrophori-Leptochloopsietum virgatae Cano, Veloz & Cano-Ortiz 2010
Solano microphylli-Leptochloopsietum virgatae Cano, Veloz & Cano-Ortiz 2010

+*CERCIDIO-CEREETEA* Borhidi 1996
**Ritterocereetalia hystricis* Borhidi 1996
-*Consoleo-Ritterocereion hystricis* Borhidi & Muñiz in Borhidi 1996
[Coastal and subcoastal semideserts in the Greater Antilles and the south of the Bahamas]

Consoleo moniliformis-Camerarietum linearifoliae ass. nova

ACKNOWLEDGMENTS

This research paper was possible thanks to the sponsorship of the Agencia Española de Cooperación Internacional para el Desarrollo (AECID), under the auspices of the *Ministerio de Asuntos Exteriores y de Cooperación de España*, which funded the project (cod. A/3499/05). We would also like to thank the members and researchers of the INTEC University of Santo Domingo and the National Botanic Garden Rafael Ma. Moscoso for their valuable cooperation in the project.

RESUMO

Este trabalho apresenta um estudo florístico e fitossociológico das comunidades de florestas secas da República Dominicana. Um total de 69 amostras foram obtidas pelo método relevé em biótopos florestais secos. As amostras foram posteriormente submetidas à análise de correspondência destendenciada para a determinação e estudo de possíveis agrupamentos. O estudo não abrange formações arbóreas desenvolvidas sobre serpentinitos, nem as chamadas florestas semideciduais, peculiares às áreas de maior pluviosidade. Foram identificados nove fitocenoses. Os resultados mais significativos levaram à descrição de seis novas associações fitossociológicas: *Simaroubetum berteroani* (floresta espinhosa seca em dunas costeiras), *Phyllostylo rhamnoidis-Prosopidetum juliflorae* (floresta seca perturbada do sul da República Dominicana), *Consoleo moniliformis-Camerarietum linearifoliae* (floresta seca sobre calcários compactos), *Lemaireocereo hystricis-Prosopidetum juliflorae* (floresta seca perturbada do norte da República Dominicana), *Lycio americani-Prosopidetum juliflorae* (floresta seca perturbada desenvolvida em solos salinos) *Guettardo ellipticae-Guapiretum discoloris* (floresta seca em colinas de topo achatado em Montecristi). O trabalho realizado representa um importante avanço nos estudos fitossociológicos e florísticos dos territórios do Caribe.

Palavras-chave: Caribe, endemismo, análise multivariada, fitossociologia, xericidade.

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