

## Survey of Wall Flora in District of Port Louis, Mauritius, Mascarenes

KERSLEY PYNEE<sup>1</sup>, BERTRAND D'UNIENVILLE<sup>2</sup>, LOUIS GOUPILLE<sup>3</sup> AND GEORGES WIEHE<sup>4</sup>

1: Mauritius Herbarium, Agricultural Services, Agronomy Division, Ministry of Agro-Industry and Food Security, Réduit, Mauritius. [kpynee@govmu.org](mailto:kpynee@govmu.org)

2: Pailles, Mauritius. [bmdunienville@gmail.com](mailto:bmdunienville@gmail.com)

3: Balaclava, Mauritius. [louis.goupille@gmail.com](mailto:louis.goupille@gmail.com)

4: Belle Vue, Mauritius. [gwiehe@outlook.com](mailto:gwiehe@outlook.com)

**ABSTRACT:** Wall flora studies started since ancient times, but information of the flora growing and colonizing urban walls on Mauritius is scarce. The aim of this study was to survey abundance and diversity of species found naturally on three different types of walls (old basalt, new basalt and concrete). The wall flora of Port Louis had a total of 68 species of plants (37 families, 61 genera), which 62 were angiosperms and six were pteridophytes. A total of 54 species (79%) were introduced, 12 species (18%) were native and two species possibly native (3%). Old basalt walls had 17 exclusive species (25%) recorded while only one species (1%) on new basalt wall, five species (7%) were shared on old and new basalt walls, 15 species (22%) on old basalt and concrete walls, and one species (1%) on concrete wall only. A total of 29 species (43%) were present on all types of walls. This study might contribute to future urban ecology studies and restoration programs of National Heritage buildings for the district of Port Louis.

**KEYWORDS:** Wall flora studies, plant diversity, urban ecology.

**RÉSUMÉ:** L'étude de la flore murale a commencé depuis fort longtemps. Les connaissances de la flore des murs urbains de l'île Maurice sont, à ce jour, rares. Le but de cette nouvelle étude était d'évaluer l'abondance et la diversité des espèces trouvées naturellement sur trois types différents de murs, construits en vieux basalte, en nouveau basalte et en béton, au cours d'une période de deux ans. La flore murale de Port-Louis comportait 68 espèces de plantes (37 familles, 61 genres), dont 62 angiospermes et six ptéridophytes. Un total de 54 espèces (79%) ont été introduites, 12 espèces (18%) étaient indigènes et deux espèces potentiellement indigènes (3%). Sur les vieux murs de basalte uniquement, 17 espèces (25%) ont été répertoriées, une espèce (1%) sur une paroi nouvelle de basalte, cinq espèces (7%) sur des murs de basalte anciens et nouveaux, une espèce (1%) sur un mur de béton seulement, 15 espèces (22%) sur de vieux murs de basalte et de béton, et 29 espèces (43%) présentes sur tous les murs. Cette étude contribuera aux futures recherches d'écologie urbaine et aux programmes de restauration des bâtiments du patrimoine national pour le district de Port-Louis.

**MOTS CLÉS:** Études flores murales, diversité végétale, écologie urbaine

*Reçu le 15/09/2017 ; accepté le 18/10/2017*

## INTRODUCTION

Walls represent specific habitats, which are partly similar to rocks and rock fissures (WOODELL, 1979). Since walls are situated within urban and rural landscape, composition of a wall flora is strongly influenced by the pressure from the surrounding ruderal and semi-natural vegetation types (DUCHOSLAV, 2002); and species present are influenced by different zones of the walls (the base, the vertical surface with joints (fissures) and the top).

Wall flora studies have been carried out since historic times. For instance, the first of Colosseum Flora in Italy was published in the 17<sup>th</sup> century (PANAROLI, 1643); other floras were published later (SEBASTIANI, 1815; DEAKIN, 1855; FIORINI MAZZANTI, 1874; ANZALONE, 1951), with the latest in 2001 (RAPOW *et al.*, 2001). This latest flora lists 243 species including the relocation of *Asphodelus fistulosus* L. (Asphodelaceae). The study of wall flora provides an understanding of the urban environments (FRANCIS, 2011) and is of special importance in the preservation of archaeological monuments (CLEERE, 1984, 1989).

Wall flora studies were done in European countries, as in Southwestern Bulgaria (NEDELICHEVA & VASILEVA, 2009), in North Greece (KRIGAS *et al.*, 1999), in South-eastern Essex (PAYNE, 1978), in Cambridge (RISHBETH, 1948), and ecology of walls in Western Europe (DARLINGTON, 1981). In Asia, principally in Japan, some recent studies were done on plant biodiversity of masonry revetments (UCHIDA *et al.*, 2015). In North Korea, a preliminary report on plant communities on walls was carried out by KOLBEK and VALACHOVIC in 1996.

Wall vegetation studies carried out in the humid tropical region are very few, for instance, in India, SHARMA and SHRINGI (1990) made a study on the wall flora of Jhalawar District of Rajathan, BIMAL & VERMA (1991) dealt with flora of Muzaffarpur District in Bihar, and GHOSH and DAS (2002) made observations in seasonal variation of wall vegetation of the district of Bankura, West Bengal. In Hong Kong, JIM (2013) showed the drivers for colonization and sustainable management of tree-dominated stonewall ecosystems. In Australia, MC PHERSON (1999) made investigations in urban ecology by studying the strangler figs in the urban parklands of Brisbane. In Brazil, DOS REIS *et al.* (2006), studied the diversity of vascular plants growing on walls of a city.

There is scarcity of information concerning urban wall flora of Mauritius. This study aim was to survey abundance and diversity of species found naturally growing on three different types of walls.

## MATERIALS AND METHODS

## STUDY AREA

Port Louis is the capital of the Republic of Mauritius (20.25°S, 57.5°E), which forms the Mascarenes in the South West Indian Ocean, together with the islands of Rodrigues and Réunion (Fig. 1). This 8-10 MYA volcanic island is nearly 60 km long by 40 km wide, or 1865 km<sup>2</sup>. It was colonized by the Dutch in 1638 and the remains of fort exist in the region of Grand Port. As from 1721, the island was taken by France, with Mahé de Labourdonnais creating the city of Port Louis in the year (1715-1810). Later, in 1810, England took possession of the island (ROUILLARD & GUEHO, 1999; CHEKE & HUME, 2008). Today, the city still has historical buildings of national and international importance, as the Appravasi Ghat, a World Heritage Site. Other important

buildings are the first post office, the Jummah Mosque, the Citadelle or Fort Adelaide. However, most of the city is of buildings constructed after 1950.

The studied area is located in the smallest district of the country with an area of 42.7 km<sup>2</sup>, situated between coordinates 20°10’ S and 57°31’ E, at an elevation ranging from sea level to 700 m above sea level (Fig. 2). According to Köppen’s climate classification (KOTTEK *et al.*, 2006), Port Louis has a hot semi-arid climate (*BSh*). The average annual temperature in Port Louis is 23.8 °C and reaches its highest temperatures where average high temperatures are around 30 °C (PADYA, 1984). The annual rainfall ranges from 800 to 1400 mm. (WILLAIME, 1984).

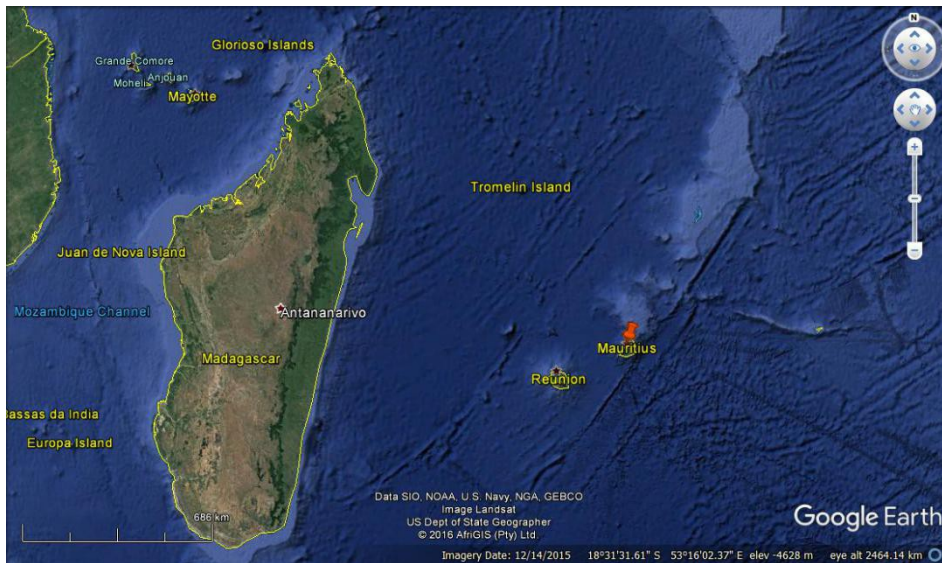


Figure 1. – Mauritius in the Indian Ocean (Google maps, 2015).

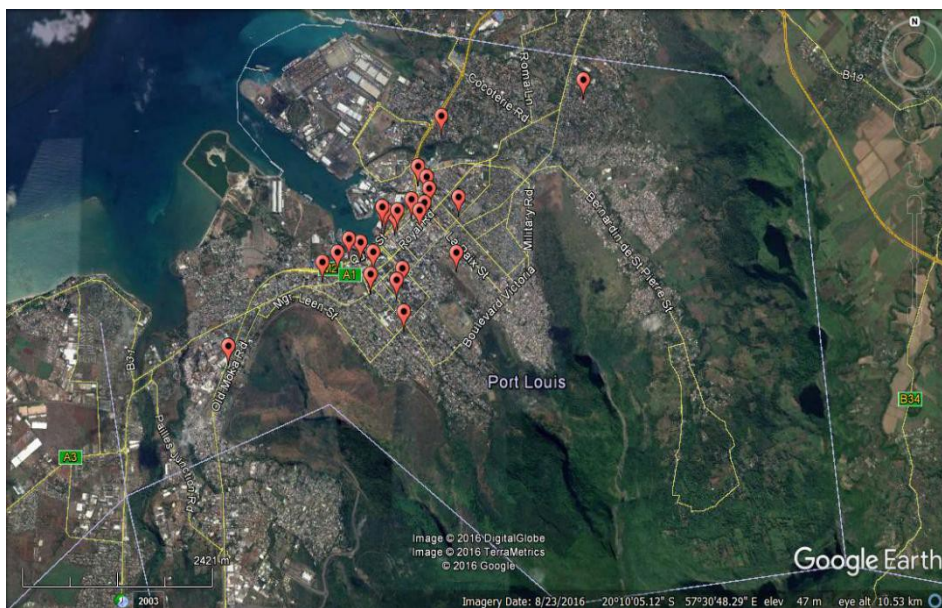


Figure 2. – Sites surveyed in Port-Louis (Google maps, 2016).

## METHODS

This study was done from September 2014 to October 2016. Regular field visits on a weekly basis were made to observe, record and collect plant species. All species encountered were photographed and their coordinates taken using a handheld GPS Garmin. Field visits were made to cover the maximum area of the city. Observations of walls were made from base to top on three types of walls, made of old basalt (*Fig. 3a & 3b*), new basalt rocks (*Fig. 3c*) and concrete (*Fig. 3d*) to record the number of each plant species spontaneously present. Species were identified using mainly the Flore des Mascareignes (BOSSER *et al.*, 1976-onwards) and also by comparison with herbarium specimens. Voucher specimens of species of botanical importance are deposited at The Mauritius Herbarium (MAU).

Old basalt is mainly rock material used during colonization by the French and the British. These rocks were rectangularly cut by slaves and indentured labourers to make buildings and walls (*Fig. 3a* and *3b*). The new basalt is material that has just recently been used (< 30 years; information gathered from the inhabitants during the survey) in the town, and these rocks were cut only to obtain a flat surface to built walls and at time canals (*Fig. 3c*).



Figure 3. – 3a) old basalt building: Postal Museum, built in 1868; 3b) old basalt wall with *Nephrolepis cordifolia*; 3c) new basalt with *Pteris vittata* as dominant species; 3d) concrete wall with *Ficus benghalensis* growing on it.

## RESULTS AND DISCUSSION

A total of 68 species of plants (37 families, 61 genera) were recorded during the survey on three different types of walls (old basalt, new basalt and concrete) (Tab. 1). Out of the 68 species inventoried, 62 were angiosperms and the remaining six were pteridophytes. A total of 17 species (25%) have been recorded only on old basalt walls, one species (1%) on new basalt wall, 5 species (7%) on old and new basalt walls, one species (1%) on concrete wall, 15 species (22%) on old basalt and concrete walls, and 29 species (43%) present on all walls (Fig. 4).

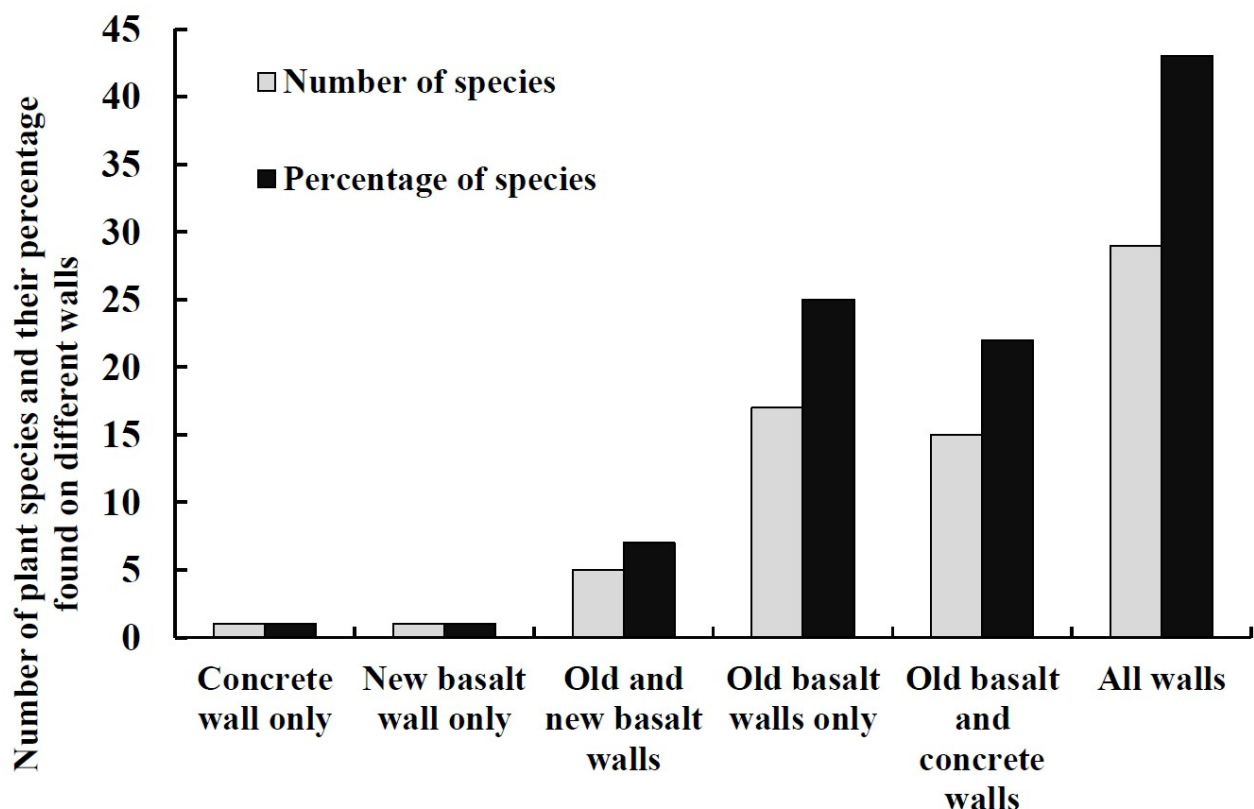


Figure 4. – Number and percentage of species distribution on different wall types.

A total of 79% species were introduced to the country, 18% species were native to and 3% cryptogenic. Most species were herbs (43%), followed by shrubs (32%), trees (4%), climbers (12%) and ferns (9%). In terms of habit, perennial plants were dominant with 47% followed by annuals (40%) and biennials (13%).

The most species-rich families were Asteraceae ( 8 species), followed by Poaceae (6 species) and Moraceae (5 species); with Fabaceae, Bignoniaceae, Solanaceae and Euphorbiaceae ( 3 species). The most species rich genera were *Ficus* (5 species), *Nephrolepis*, *Tabebuia* and *Passiflora* (2 species each).

The commonest species found were *Adiantum capillaris-veneris*, *Pteris vittata*, *Pilea microphylla*, *Cleome viscosa*, *Ficus religiosa*, *Chloris barbata*, *Gamochoeta purpurea*,

*Dolichondra unguis-cati*, *Tabebuia pallida*, *Eleusine indica*, *Lantana camara*, *Ficus reflexa*, *Chomolaena odorata*, *Tridax procumbens*, *Ficus benghalensis* and *Commelina benghalensis*.

During field visits, we observed that roots of mostly *Ficus* species have penetrated inside walls through cracks and crevices, forcing out large fragments of cemented walls, as well as, stones (Fig. 5). Consequently, such damages could cause negative effects on wall stabilities. At the same time, this could add to the problem of health and safety issues for the public through falling of concrete materials and stones on paths and roads.

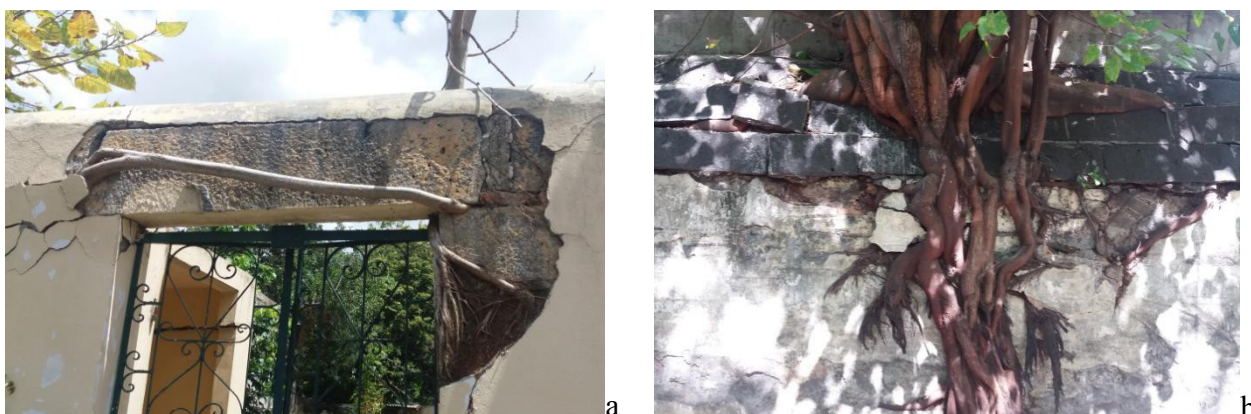


Figure 5. – Damages by *Ficus religiosa*: 5a) Wall of a residential building in vicinity of Foucault Street and Deschartes Street (Site 22); 5b) Wall of National Heritage Building at back of Postal Museum Building (Site 13).

## CONCLUSION

The present study shows the diversity of plant species growing on different type of walls within the city of Port Louis; hence it might contribute for future studies dealing with urban ecology and restoration programs of National Heritage buildings. Similar studies to other areas of the country with different climatic conditions, including also the islets with historical buildings should be anticipated. Native species as well as non-invasive exotic ones recorded could be used to embellish the city through creation of vertical gardens.

## ACKNOWLEDGEMENTS

Special thanks to Dr Claudia Baider who provided suggestions for improving the manuscript. We are also grateful to all people who helped during the field visits.

## REFERENCES

- ANZALONE B., 1951. – Flora e vegetazione dei muri di Roma. *Annals of Botany*, **23**(3): 393-497.  
 BIMAL R. & VERMA B.K., 1991. – Flora of Muzaffarpur District, Bihar (India). Part 1. Wall flora. *Journal of Economic and Taxonomic Botany*, **15**: 261–263.

- BOSSER J., CADET T., GUÉHO J. & MARAIS W., (1976)-onwards. – *Flore des Mascareignes - La Réunion, Maurice, Rodrigues*. MSIRI/ORSTOM/KEW. Port Louis, Mauritius.
- CHEKE A. & HUME J., 2008. – *Lost land of the dodo: An ecological history of Mauritius, Réunion and Rodrigues*. T & AD Poyser, London, 464 p.
- CLEERE H., 1984. – *Approaches to the archaeological heritage: A comparative study of World Cultural Resource Management Systems*. Cambridge University Press, Cambridge: 82-88.
- CLEERE H., 1989. – *Archaeological heritage management in the modern world*. Unwin Hyman, London: 2-19.
- DARLINGTON A., 1981. – *Ecology of Walls*. Heinemann Educational Books, Ltd., London, 138 p.
- DEAKIN R., 1855. – *Flora of the Colosseum of Rome*. Groombridge and Sons, London, 237 p.
- DOS REIS V.A., LOMBARDI J.A. & DE FIGUEIREDO R.A., 2006. – Diversity of vascular plants growing on walls of a Brazilian city. *Urban Ecosystems*, **9**(1): 39-43.
- DUCHOSLAV M., 2002. – Flora and vegetation of stony walls in East Bohemia (Czech Republic). *Preslia-Praha*, **74**(1):1–26.
- FIORINI MAZZANTI E., 1874–1878. – Florula del Colosseo. *Atti Accademia Pontificia Nuovi Lincei*, **28**: 20; **29**: 33; **30**: 8; **31**:13.
- FRANCIS R.A., 2011. – Wall ecology: A frontier for urban biodiversity and ecological engineering. *Progress in Physical Geography*, **35**(1): 43-63.
- GHOSH R.B. & DAS D., 2002. – Observation in seasonal variation of wall vegetation of the district of Bankura, West Bengal. *Journal Economic and Taxonomic Botany*, **26**(3): 557–561.
- Google, 2015. *Google Maps*. “MAURITIUS, INDIAN OCEAN.” Map. 14 December 2015.
- Google 2016. *Google Maps*. “PORT – LOUIS CITY, MAURITIUS.” Map. 23 August 2016.
- JIM C.Y., 2013. – Drivers for colonization and sustainable management of tree-dominated stonewall ecosystems. *Ecological Engineering*, **57**: 324-335.
- KOLBEK J. & VALACHOVIC M., 1996. – Plant communities on walls in North Korea: a preliminary report. *Haiszia Journal of Botany*, **6**: 67–75.
- KOTTEK M., GRIESER J., BECK C., RUDOLF B. & RUBEL F., 2006. – World map of the Köppen-Geiger climate classification updated. *Meteorologische Zeitschrift*, **15**(3): 259-263.
- KRIGAS N., LAGIOU E., HANLIDOU E. & KOKKINI S., 1999. – The vascular flora of the Byzantine Walls of Thessaloniki (N Greece). *Willdenowia*, **29**: 77-94.
- MC PHERSON J.R., 1999. – Studies in urban ecology: strangler figs in the urban parklands of Brisbane, Queensland, Australia. *Australian Geographical studies*, **37**: 214–229.
- NEDELICHEVA A. & VASILEVA A., 2009. – Vascular Plants from the Old Walls in Kystendil (Southwestern Bulgaria). *Biotechnology & Biotechnological Equipment*, **23**(sup 1): 154-157.
- PADYA B.M., 1984. – *The climate of Mauritius*. Meteorological Office, Mauritius, 217 p.
- PANAROLI D., 1643. – *Jatrologismi sive medicae observationes quibus additus est in fine Plantarum Amphitheatralium Catalogus*. Typis Dominici Marciani, Rome.

- PAYNE R.M., 1978. – The flora of walls in south-eastern Essex. *Watsonia* **12**: 41–46.
- RAPOW L.C., CANEVA G. and PACINI A., 2001. – La flora del Colosseo (Roma). *Webbia*, **56**(2): 321-342.
- RISHBETH J., 1948. – The flora of Cambridge walls. *Journal of Ecology*, **36**: 136–148.
- ROUILLARD G. & GUEHO J., 1999. – *Plantes et leur histoire à l'Ile Maurice*. MSM, Port Louis, 752 p.
- SEBASTIANI A., 1815. – *Romanarum plantarum fasciculus alter. Accedit enumeratio plantarum sponte nascentium in rudibus amphitheatri Flavii auctore Antonio Sebastiani*. Typis Pauli Salviucci et filii.
- SHARMA N.K. & SHRINGI O.P., 1990. – Wall flora of Jhalawar District (Rajasthan). *Journal of Economic and Taxonomic Botany*, **14**: 647–654.
- UCHIDA T., FURUNO M., MINAMI T., YAMASHITA S., UCHIYAMA T., ARASE T. & HAYASAKA D., 2015. – Ecological significance of masonry revetments in plant biodiversity. *Int. J. of GEOMATE*, **9**(1): 1353-1359.
- WILLAIME P., 1984. – Carte pédologique de l'Ile Maurice 1/50 000. *Occasional Paper Mauritius Sugar Industry Research Institute*, 33 p.
- WOODELL S.R.J., 1979. – *The flora of walls and pavings*. In Laurie I.C. (ed.), *Nature in cities*. John Wiley & Sons, New York: 135-156.

## APPENDIX 1.

## LIST OF STUDIED SITES

1. Sainte Croix, Allée Pere Laval, next to Canal Bathurst Street (20°8'44.10"S; 57°31'34.31"E);
2. Roche Bois, Abattoir Road, basalt wall (20°08'57.63"S; 57°30'31.62"E);
3. Close to Sainte Antoine Catholic Church, next to Abattoir Road (20°9'17.26"S; 57°30'21.29"E);
4. Corner of Etienne Pellereau Street, ruins of basalt wall (20°09'21.36"S; 57°30'25.10"E);
5. Barbeau Street, basalt wall of old bridge (20°09'25.80"S; 57°30'26.26"E);
6. Madad Ul Islam Street (20°9'29.15"S; 57°30'39.21"E);
7. Louis Pasteur Street (20°9'34.17"S; 57°30'12.18"E);
8. Dr Sun Yat Sen Street (20°9'31.24"S; 57°30'24.11"E);
9. Sir Robert Townsend Farquhar Street, basalt wall of old building (20° 9'29.95"S; 57°30'18.38"E);
10. Emmanuel Anquetil Street (20°9'34.23"S; 57°30'21.96"E);
11. Junction between Corderie Street and Sir Robert Townsend Farquhar Street (20°9'36.18"S; 57°30'11.02"E);
12. Post Office, Caudan (20°9'35.70"S; 57°30'6.42"E);
13. Postal Museum Building, Caudan (20°9'33.89"S; 57°30'6.81"E);
14. Ex Granary, Caudan (20°9'32.88"S; 57°30'5.47"E);
15. Old Train Station, Caudan (20° 9'45.13"S; 57°29'50.72"E);
16. Dumas Street. (20°9'46.45"S; 57°29'55.85"E);
17. Edith Cavell Street (20° 9'50.20"S; 57°30'1.49"E);
18. Poudrière Street (20°9'56.50"S; 57°30'14.35"E);
19. Edith Cavell Street, next to Government Primary School (20°10'0.96"S; 57°30'11.81"E);
20. Vicinity of Labourdonnais Street and Wellington Street (20°10'13.09"S; 57°30'15.03"E);
21. Orleans Street (20° 9'58.74"S; 57°30'0.31"E);
22. In vicinity of Foucault Street and Deschartres Street (20° 9'50.30"S; 57°29'45.65"E);
23. Motais Street (20°9'54.12"S; 57°29'39.01"E);
24. La Citadelle (20° 9'50.53"S; 57°30'38.28"E).



**Table I.** – List of families and species of plants recorded on walls of Port Louis with their status, life forms; number of individuals (NI); category; substrate: basalt wall (BW), and concrete wall (CW).

Family	Taxa	Status	Life form	Category	NI	Old BW	New BW	CW
Acanthaceae	<i>Barleria prionitis</i> L.	Exotic	Herb	annual	2	*		
Amaranthaceae	<i>Amaranthus dubius</i> Mart. ex Thell.	Exotic	Herb	annual	4	*	*	
Anacardiaceae	<i>Schinus terebinthifolius</i> Raddi	Exotic	Tree	perennial	3	*		
Apocynaceae	<i>Catharanthus roseus</i> (L.) G.Don	Exotic	Herb	biennial	24	*	*	*
Araceae	<i>Syngonium auritum</i> (L.) Schott	Exotic	Climber	perennial	3	*		
Asteraceae	<i>Ageratina riparia</i> (Regel) R.M.King & H.Rob.	Exotic	Herb	annual	3	*	*	
Asteraceae	<i>Chromolaena odorata</i> (L.) King & H.E. Robins.	Exotic	Shrub	perennial	26	*	*	*
Asteraceae	<i>Conyza sumatrensis</i> (Retz.) E. Walker	Exotic	Herb	annual	15	*		*
Asteraceae	<i>Cyanthillium cinereum</i> (L.) H.Rob.	Native	Herb	annual	8	*	*	*
Asteraceae	<i>Emilia sonchifolia</i> (L.) DC. ex DC.	Exotic	Herb	annual	7	*	*	*
Asteraceae	<i>Gamochaeta purpurea</i> (L.) Cabrera	Exotic	Herb	annual	25	*		
Asteraceae	<i>Sonchus oleraceus</i> L.	Exotic	Herb	annual	3	*		
Asteraceae	<i>Tridax procumbens</i> L.	Exotic	Herb	annual	14	*		*
Bignoniaceae	<i>Dolichandra unguis-cati</i> (L.) L.G. Lohmann	Exotic	Climber	perennial	23	*	*	*
Bignoniaceae	<i>Tabebuia pallida</i> (Lindl.) Miers	Exotic	Shrub	perennial	19	*	*	*
Bignoniaceae	<i>Tabebuia rosea</i> DC.	Exotic	Shrub	perennial	9	*		*
Boraginaceae	<i>Cordia curassavica</i> (Jacq.) Roem. & Schult.	Exotic	Shrub	perennial	5	*		
Boraginaceae	<i>Heliotropium amplexicaule</i> Vahl	Exotic	Shrub	biennial	17	*	*	*
Capparidaceae	<i>Cleome viscosa</i> L.	Exotic	Shrub	annual	32	*	*	*
Combretaceae	<i>Terminalia catappa</i> L.	Exotic	Tree	perennial	1	*		
Commelinaceae	<i>Commelina benghalensis</i> L.	Cryptogenic	Herb	biennial	32	*	*	*
Commelinaceae	<i>Tradescantia spathacea</i> Sw.	Exotic	Herb	perennial	3	*		*
Convolvulaceae	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Exotic	Climber	biennial	7	*	*	*
Cyperceae	<i>Kyllinga brevifolia</i> Rottb.	Native	Herb	annual	8	*		*
Euphorbiaceae	<i>Acalypha indica</i> L.	Exotic	Herb	annual	12	*	*	
Euphorbiaceae	<i>Euphorbia hirta</i> L.	Cryptogenic	Herb	annual	13	*	*	*
Euphorbiaceae	<i>Ricinus communis</i> L.	Exotic	Shrub	biennial	5	*		
Fabaceae	<i>Leucaena leucocephala</i> (Lam.) de Wit	Exotic	Shrub	perennial	16	*	*	*
Fabaceae	<i>Pithecellobium unguis-cati</i> (L.) Benth.	Exotic	Shrub	perennial	4	*		
Fabaceae	<i>Tamarindus indica</i> L.	Exotic	Shrub	perennial	1			*
Lamiaceae	<i>Hyptis pectinata</i> (L.) Poit.	Exotic	Herb	annual	4	*	*	*
Lamiaceae	<i>Leonurus japonicus</i> Houtt.	Exotic	Herb	annual	1	*		
Lythraceae	<i>Punica granatum</i> L.	Exotic	Shrub	perennial	1	*		
Moraceae	<i>Ficus benghalensis</i> L.	Exotic	Shrub	perennial	13	*	*	*
Moraceae	<i>Ficus microcarpa</i> L.f. Vahl.	Exotic	Shrub	perennial	2	*		
Moraceae	<i>Ficus pumila</i> L.f.	Exotic	Shrub	perennial	7	*	*	*
Moraceae	<i>Ficus reflexa</i> Thunb.	Native	Shrub	perennial	15	*	*	*
Moraceae	<i>Ficus religiosa</i> L.	Exotic	Shrub	perennial	35	*	*	*
Moringaceae	<i>Moringa oleifera</i> Lam.	Exotic	Shrub	perennial	3	*		*
Nephrolepidaceae	<i>Nephrolepis biserrata</i> (Sw.) Schott	Native	Fern	perennial	6	*	*	*
Nephrolepidaceae	<i>Nephrolepis cordifolia</i> (L.) K. Presl	Native	Fern	perennial	8	*	*	*
Nyctaginaceae	<i>Boerhavia diffusa</i> L.	Exotic	Herb	annual	3	*	*	
Oleaceae	<i>Jasminum fluminense</i> Vell. subsp. mauritianum (Bojer ex DC.) Turrill	Native	Climber	perennial	5	*		*

**Table 1 (cont.).** – List of families and species of plants recorded on walls of Port Louis with their status, life forms; number of individuals (NI); category; substrate: basalt wall (BW), and concrete wall (CW).

Family	Taxa	Status	Life form	Category	NI	Old BW	New BW	CW
Passifloraceae	<i>Passiflora foetida</i> L.	Exotic	Climber	biennial	7	*	*	*
Passifloraceae	<i>Passiflora suberosa</i> L.	Exotic	Climber	biennial	8	*	*	*
Phyllanthaceae	<i>Phyllanthus amarus</i> Schum.	Exotic	Herb	annual	9	*	*	*
Piperaceae	<i>Piper betle</i> L.	Exotic	Climber	perennial	7	*		*
Poaceae	<i>Chloris barbata</i> Sw.	Exotic	Herb	annual	28	*	*	*
Poaceae	<i>Eleusine indica</i> (Linn.) Gaertn.	Exotic	Herb	annual	18	*	*	*
Poaceae	<i>Eragrostis amabilis</i> (L.) Wight & Arn. ex Nees	Exotic	Herb	annual	3	*		
Poaceae	<i>Heteropogon contortus</i> (L.) P.Beauv. ex Roem. & Schult.	Exotic	Herb	annual	9	*	*	
Poaceae	<i>Melinis repens</i> (Willd.) Zizka	Exotic	Herb	annual	6	*		*
Poaceae	<i>Panicum maximum</i> Jacq.	Exotic	Herb	annual	6	*	*	*
Polypodiaceae	<i>Phymatosorus scolopendria</i> (Burm. f.) Pic. Serm.	Native	Fern	perennial	8	*	*	*
Portulacaceae	<i>Portulaca oleracea</i> L.	Native	Herb	annual	5	*		*
Pteridaceae	<i>Adiantum capillaris-veneris</i> L.	Native	Fern	perennial	145	*		*
Pteridaceae	<i>Pteris vittata</i> L.	Native	Fern	perennial	116	*	*	*
Rubiaceae	<i>Morinda citrifolia</i> L.	Exotic	Shrub	perennial	3	*		*
Salicaceae	<i>Flacourtia indica</i> (Burm. f.) Merr.	Exotic	Tree	perennial	1		*	
Solanaceae	<i>Lycopersicon esculentum</i> Mill.	Exotic	Shrub	annual	2	*		
Solanaceae	<i>Solanum americanum</i> Mill.	Exotic	Herb	annual	3	*		*
Solanaceae	<i>Withania somnifera</i> (L.) Dunal	Exotic	Shrub	perennial	5	*		*
Thelypteridaceae	<i>Cyclosorus dentatus</i> (Forssk.) Ching	Native	Fern	perennial	2	*		
Turneraceae	<i>Turnera angustifolia</i> Mill.	Exotic	Shrub	biennial	5	*		*
Urticaceae	<i>Pilea microphylla</i> (L.) Liebm.	Exotic	Herb	annual	57	*	*	*
Verbenaceae	<i>Lantana camara</i> L.	Exotic	Shrub	biennial	17	*	*	*
Verbenaceae	<i>Verbena bonariensis</i> L.	Exotic	Herb	perennial	8	*		
Vitaceae	<i>Cissus rotundifolia</i> (Forssk.) Vahl.	Native	Climber	perennial	3	*		