## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement</td>
<td>i</td>
</tr>
<tr>
<td>Abstract</td>
<td>v</td>
</tr>
<tr>
<td>Contents</td>
<td>vii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xiii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xxii</td>
</tr>
<tr>
<td>List of Photos and Map</td>
<td>xxx</td>
</tr>
<tr>
<td>List of Plates</td>
<td>xxxiv</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>xxxv</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>xxxvi</td>
</tr>
<tr>
<td>1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Flacourtiaceae</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Hydnocarpus Gaertn.</td>
<td>4</td>
</tr>
<tr>
<td>1.3 Need and Significance of the Study</td>
<td>7</td>
</tr>
<tr>
<td>1.4 Objectives of the Study</td>
<td>8</td>
</tr>
<tr>
<td>1.5 Materials and Methods in Brief</td>
<td>8</td>
</tr>
<tr>
<td>1.6 Scope of the Study</td>
<td>9</td>
</tr>
<tr>
<td>1.7 Format of the Report</td>
<td>9</td>
</tr>
<tr>
<td>2 Review of Related Literature</td>
<td>12</td>
</tr>
<tr>
<td>2.1 Ethnobotanical Studies</td>
<td>12</td>
</tr>
<tr>
<td>2.1.1 Genus Hydnocarpus in Medicine</td>
<td>14</td>
</tr>
</tbody>
</table>
3.4.8 Documentation

3.5 Pharmacognostic Studies

3.5.1 Leaf and Petiole Anatomy

3.5.2 Vein Clearing - Venation Pattern

3.5.3 Epidermal and Stomatal Morphology

4 Results and Discussion

4.0 Introduction

4.1 Ethnobotanical Studies

4.1.1 Medicinal Significance

4.1.1.1 Medicinal Uses Documented in Literature

4.1.1.2 Medicinal Uses Elicited from Survey

4.1.1.3 Veterinary Medicine

4.1.2 Agricultural Significance

4.1.3 Ecological Significance

4.1.4 Economic Significance

4.1.5 Religious Significance

4.1.6 Other Uses

4.1.7 Other Known Facts

4.1.8 Conclusion

4.2 Phytochemical Studies

4.2.1 Preliminary Phytochemical Screening

4.2.2 HPTLC Profiling

4.2.2.1 Hydnocarpus macrocarpa (Beddome) Warb.
4.2.3.10 Saponins 179

4.2.4 HPTLC Comparison of Genus *Hydnocarpus*

In Kerala Using Chemical Standards 182

4.2.4.1 HPTLC Screening Using Apigenin 183

4.2.4.2 HPTLC Screening Using Luteolin 183

4.2.4.3 HPTLC Screening Using Ursolic Acid 183

4.2.5 Phytochemical Relationship of the Genus *Hydnocarpus* In Kerala 184

4.2.6 Conclusion 185

4.3. Pharmacognostic Studies 186

4.3.1 Anatomical Description of *Hydnocarpus* 186

4.3.1.1 *Hydnocarpus macrocarpa* (Beddome) Warb. 187

4.3.1.2 *Hydnocarpus pentandra* (Buch.-Ham.) Oken. 188

4.3.1.3 *Hydnocarpus alpina* Wight 190

4.3.1.4 *Hydnocarpus pendulus* Manilal, Sabu & Sivarajan 192

4.3.2 Comparison of the Anatomical Characters 194

4.3.2.1 Midrib and Lamina 194

4.3.2.2 Petiole 195

4.3.3 Diagnostic Characters of the Species of Genus *Hydnocarpus* In Kerala 196

4.3.4 Anatomical Key for the Identification of the Species of *Hydnocarpus* in Kerala 197

4.3.5 Conclusion 197
5 Summary and Conclusion

5.1 The Study in Retrospect

5.1.1 Objectives of the Study

5.2 Materials and Methods in Brief

5.3 Major Findings

5.3.1 Ethnobotanical Studies

5.3.2 Phytochemical Studies

5.3.3 Pharmacognostic Studies

5.4 Conclusions

References

Appendices