

# [Chapter#3 majid,ehtesham,zoona 27-05-2017 sajan gali abbottabad dr jan](https://assignbuster.com/chapter3-majidehteshamzoona-27-05-2017-sajan-gali-abbottabad-dr-jan/)

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Chapter#3MATERIALS AND METHODS3.

1 Literature Survey In advance to research relevant literature about the topic wasstudied. For that reason different material sources were used i. e. books, floras, research papers and articles. Unfortunately bryophytes are neglectedand there is no authentic flora of bryophytes of Pakistan. Because of this  different floras of world were followed i. e.

flora of China, Flora of North America, British Bryological Field Guide andother related floras, book i. e. Diversity of Microbe and Cryptogams (Asthana, 2006). 3. 2 Field Study and Collection of Plant Material During field work various materials were used along the fieldsurvey  i. e., Camera (21 Mega Pixel, 24X) GPS, Polythene bags , Ball Point and permanent marker, Field notebook, mapof research area, and news paper. Many field trips were organized in differentseasons of 2017.

Field trips were conducted both in summer and winter. About25-30 trips were arranged and total 370 specimens were collected. Duringcollection, a separate collection number was given to every specimen and taggedwere attached to polythene bags. Photographs were also taken on the spot andespecially focused the following characters i. e. Habit, Habitat, Substrate, Gametophyte and sporophyte stage.

Table 1. visitedlocalities during field’s surveys Dated Locality District Collectors 16-03-2017 Thandiani Abbottabad Ehsan, Zoona 16-03-2017 Nawan shehr Abbottabad Ehsan, Zoona 16-03-2017 Ilyasi Mosque Abbottabad Ehsan, Zoona 19-03-2017 Mirpur Abbottabad Ehtesham, Enam, Zoona 19-03-2017 Kala Pull Abbottabad Ehtesham, Enam, Zoona 23-03-2017 Salamkot Abbottabad Ehtesham, Enam, Zoona 23-03-2017 Neelay Pair Abbottabad Ehtesham, Enam, Zoona 23-03-2017 Mangal Abbottabad Ehtesham, Enam, Zoona 25-03-2017 Salhad Abbottabad Ehtesham, Enam, Zoona 25-03-2017 Havelian Abbottabad Ehtesham, Enam, Zoona 09-04-2017 Katha Dobathar Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 09-04-2017 Paswal Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 09-04-2017 Sando Bala Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 09-04-2017 Habib Abad Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 15-04-2017 On way to Sherwan Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 15-04-2017 Sherwan Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 15-04-2017 Takia Sheikal Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 26-05-2017 Ghari Phulgran Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 26-05-2017 Kiala Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 26-05-2017 Sajikot Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 26-05-2017 Sajikot Natural waterfall Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 26-05-2017 Kalabagh Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Nagri Bala Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Sajan Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Keri Riki Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Jhansa Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Mochidara Abbottabad Dr Jan Alam, Dr Abdul Majid, Ehtesham, Zoona 27-05-2017 Donga Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 03-06-2017 Kundla Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham   03-06-2017 Toheed Abad Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 03-06-2017 Changla Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 03-06-2017 Khanus Pur Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham  08-07-2017 On way to Namli Maira Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 08-07-2017 Namli Maira Stop 1 Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 08-07-2017 Khurd Bandiala Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 08-07-2017 Namli Maira Abshar Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 30-07-2017 Bagan Road Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 30-07-2017 Nathia Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 30-07-2017 Khaira Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham 30-07-2017 Changla Gali Abbottabad Dr Jan Alam, Dr Abdul Majid, Zoona, Ehtesham, 12-08-2017 Koza Gali Abbottabad Dr Abdul Majid, Zoona, Ehtesham, Enam 12-08-2017 Chowk Ayaubi Abbottabad Dr Abdul Majid, Zoona, Ehtesham, Enam 12-08-2017 Doonga Gali Abbottabad Dr Abdul Majid, Zoona, Ehtesham, Enam 12-08-2017 Bara Gali Campus Abbottabad Dr Abdul Majid, Zoona, Ehtesham, Enam 12-08-2017 Galliat Abbottabad Dr Abdul Majid, Zoona, Ehtesham, Enam  3. 3 Washing, Packingand labeling of specimensAfter collection, these specimens were put in polyethene bags.

Further these specimens were immediately washed with water and transferred tonewspapers for drying. When specimens were dried, these were transferred totheir  packets, which were labeled; the size of packet was 6cm x4cm. 3.

4 Laboratory workCollected specimens were studied in laboratory, anatomical andmorphological characteristics were examined, Plant length, plant width, size ofleaf length, size of leaf width, capsule length size and capsule width, setacolor and length, and calyptras size were also examined. Forexamining in the collected specimens for morphology stereoscope is used beforethat desired specimen should be kept in water for 15-20 minutes. Different characterswere studied plant length, gametophyte sporophyte and seta length should betaken. Then leaves size, shape and hair tip is noted it may be present orabsent if present it may be percurrent or excurrent. Leaves should be separatedcarefully because the leaves are too tender and can be broken easily..

All the character details were noted with the help ofmicroscope. Leaves were further examined through a microscope at a cellularlevel; the small leaves were examined. Apical cells, marginal cells, medialcells, basal cells, and Alar cells were examined. .

All these characters wereexamined with used of stereoscope, size were taken in centimeter and millimeter(mm). For anatomtomical features T. S of leaves were taken . 3. 5 Identification andDocumentation After the laboratory work, for identification purpose different Floras was consulted based already notedall characteristics.

These specimens were identified by following keys atdifferent taxonomic level. Further description of each species was given afteridentification process by following their rule, which were given in differentFlora of world. 3.

6 Deposition of Specimens After the identification of plants the identified specimens weredeposited in Cryptogamic lab, Department of Botany, Hazara University.