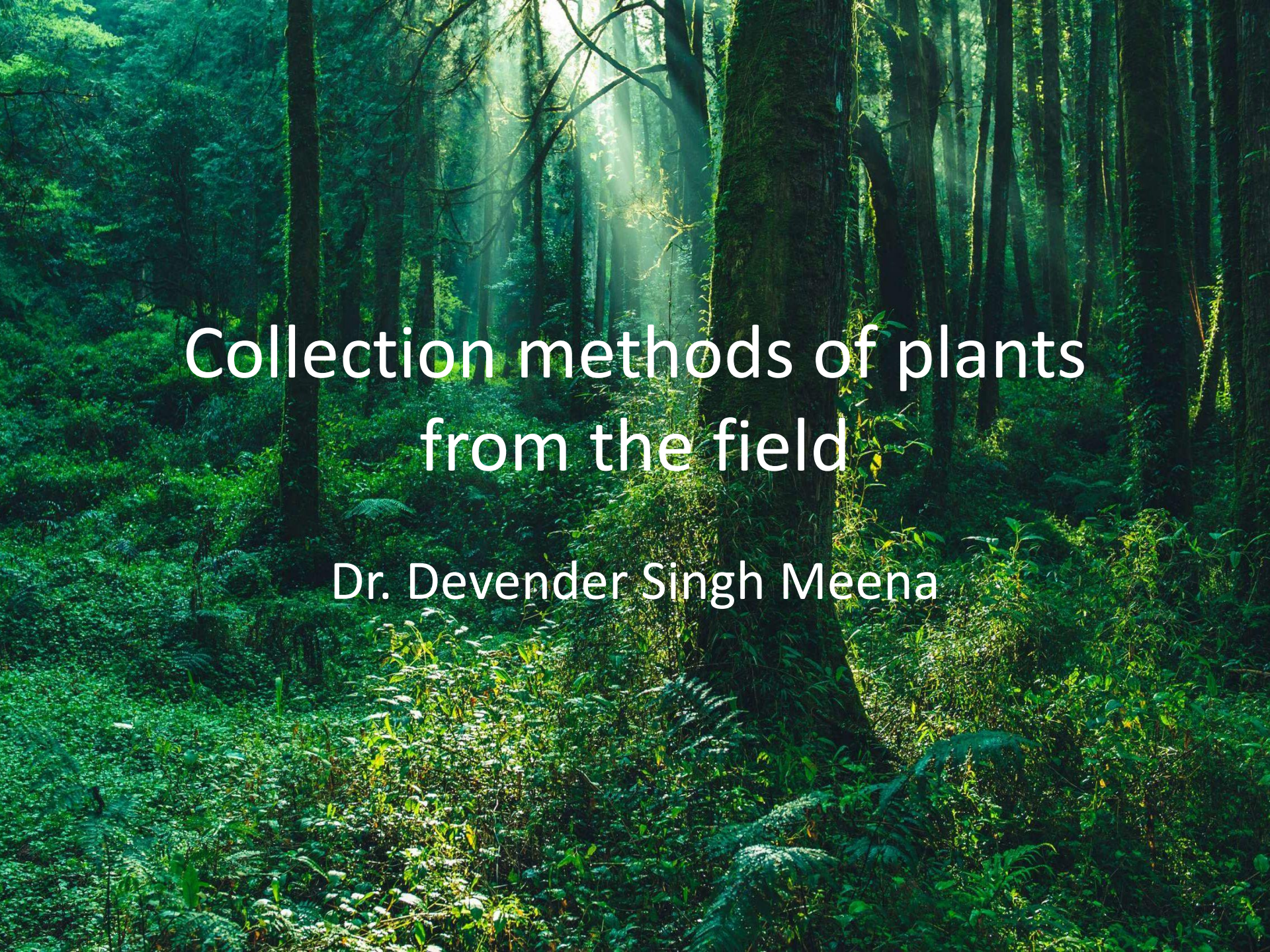

Collection methods of plants from the field

Dr. Devender Singh Meena

The purposes of collection

- Today there are two main reasons for collecting plants.
- The first is to obtain records and specimens of plants, either for a personal collection or to be stored in an herbarium.
- The second major reason for plant collecting is in order to later identify an unknown specimen encountered during fieldwork.

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What to look for in a specimen

- Specimens for collection should be as complete as possible. Ideally flowers and fruit should be included, as well as vegetative parts. Clearly, in most cases, this is impossible since ripe fruit and flowers do not usually occur at the same time. Often, however, remains of growth from the previous year can be found at the base of the plant or on another specimen nearby. Only collect fruits or seeds if you are certain that they belong to the same plant or the same species.

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- Specimens should be typical and healthy, with at least some fully expanded leaves where possible.
- Take the plant from its typical habitat. If a species normally grows in woodland, do not collect specimens growing by the roadside or in a clearing. Sometimes leaf shape, flower colour and other characters are completely altered on plants growing in full sunlight.

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What to collect

- The whole of small vascular plants should be collected including the underground portion. Roots, trailing or underground stems and storage organs are often helpful (and sometimes essential) in identifying specimens. A strong knife or small trowel is helpful for digging out a plant. Excess soil can be shaken off, or washed off carefully if water is available.

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- Mosses and lichens should also be taken whole. Where they grow in mats a good handful should be removed. Ideally the specimen should be pure, not mixed with other species.
- Mosses and lichens growing in cushions or clumps, or closely growing on the substrate should be cut away with some of the substrate. Thus the specimen consists of bark, rotting wood, soil, humus and so on as well as the plant. This ensures that the growth form of the plant is retained.

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- specimens containing all essential features (all leaf types, twigs, flowers, fruits and so on) must be cut from the plant. If the species is a large herb such as a thistle, the specimen should include basal leaves as well as enough stem to show the range of stem leaves and flowering and fruiting material. Shrubs and old and new twigs, buds where possible and fruit and/or flowers.

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- If lower and upper leaves are different, or there is significant variation between a shaded and unshaded side of a tree, then collections should be made from both. To minimize damage to parent trees and to specimens, twigs should always be cut off cleanly with a sharp knife or pruners. Breaking the twig can strip the bark and ruin a specimen or cause unnecessary harm to the tree or shrub from which it was taken.

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How to collect

- Ideally, collections of vascular plants should be put immediately into a field press, because this produces the best looking specimens.
- Collecting into plastic bags is another option. A range of bag sizes should be available. Small plants can be placed singly, or two or three together if necessary, in a suitably sized bag. Plastic bags are not recommended for serious collecting because the risk of damaging the specimen is very great. Petals are likely to be knocked off, and stems will almost certainly be bent or broken.

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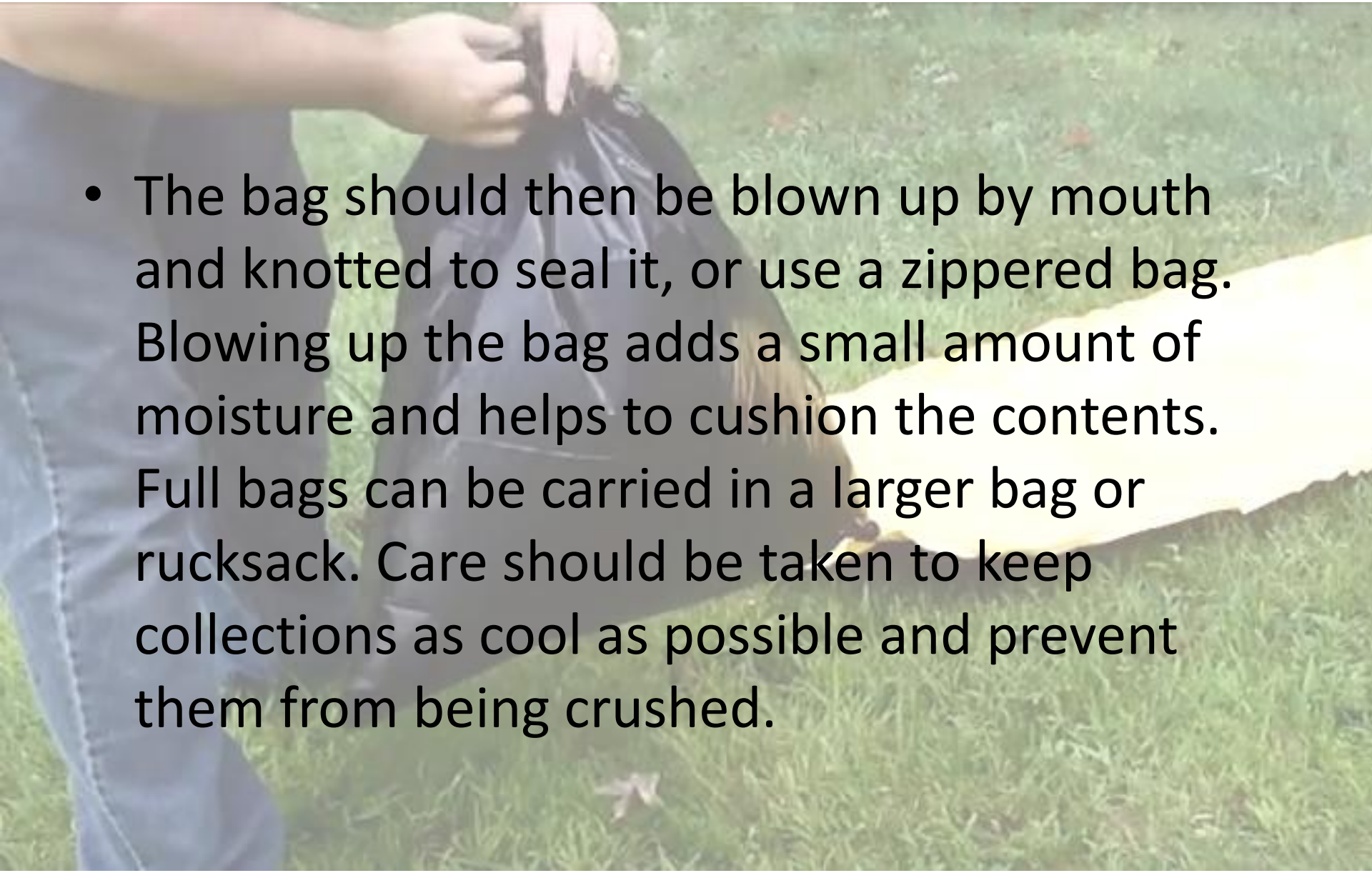

- The bag should then be blown up by mouth and knotted to seal it, or use a zippered bag. Blowing up the bag adds a small amount of moisture and helps to cushion the contents. Full bags can be carried in a larger bag or rucksack. Care should be taken to keep collections as cool as possible and prevent them from being crushed.

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- With each plant, and firmly attached to it if several plants are collected together, should be a label bearing a collection number which corresponds to numbered notes in the collection book. Jewelers' tags are an excellent means of labeling plants. The label is often left on the dried specimen.
- Mosses and lichens should always be collected in paper bags or envelopes. These have the advantage of allowing the plant to be dried in the same bag. Notes can be written directly on the bag.

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Notes to take

- Every specimen should be accompanied by comprehensive notes retained in a collection book.
- These notes may not only aid in identification of the material, but will later be used to complete the information on the herbarium label. It is far better to take too many notes than too few, and is dangerous to trust information to memory, especially as there may often be several months or more between collection and processing.

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The notes should contain

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Collection number

- This is a serial number specific to a collector and a specimen. The number may start at 1 and continue through the collector's life time. Other people augment the serial number with notes of name, place, date and so on. For example, DSM/DEL/15/237 may be specimen #237 collected by Devender Singh Meena in Delhi in 2015. This kind of number is sometimes easier to interpret, and new numbers can be started for new collections.

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The name of the plant

- This is important as it helps the collector remember the individual specimen even if the labels are accidently lost or mixed.

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Locality

- This should be as detailed as possible, including the name of towns, roads lakes and so on in the vicinity, as well as Township, County or District. The latitude and longitude are also important. Handheld GPS units make recording accurate locations much easier than it used to be.
- Don’t rely on mobile phone based GPS

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Description

- This should include everything about the plant that is not obvious on the herbarium specimen. Essential items are the height, type of bark, whether the stem is upright, sprawling or drooping, obvious smells, whether the plant is clumped, single or growing in patches, and the presence of creeping or underground stems. Flower and fruit colour should also be noted as these often fade on dried specimens.

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Habitat

- This should include the general habitat as well as more specific details of micro-habitat.
- Important points are type of soil or other substrate (sand, clay, granite, dead wood, other vegetation), associated species, moisture and aspect (fully exposed on a south facing bank; in a damp hollow under dense scrub, etc).
- The more careful and detailed such notes are the more useful they become.

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- Date.

- Names of collector(s).

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