

## HOUTANATOMIE in praktyk

Tydens 'n maandvergadering het ons hier in Pretoria die voorreg gehad om na prof Alewyn Burger te luister oor ondermeer hoe hy die waarde van korrekte hout-identifikasie beklemtoon. Hy het ook verwys na die probleem met die variasie in volksname (sg. populêre name) en die feit beklemtoon dat dit moeilik, indien nie onmoontlik is nie, om hout korrek te identifiseer indien slegs volksname bekend is en gebruik word. Uit my eie ervaring weet ek dat eerstens, die kenmerke van die blomme en vrugte en daarna van die blare, bas en groeiwyse belangrik is om 'n positiewe identifikasie van 'n boomsoort te kan maak. Indien jy slegs 'n stukkie hout het, en jy is nie ten volle vertrouwd met daardie tipe hout nie, is dit soms bykans onmoontlik, vir my altans, om net op die hout se voorkoms 'n positiewe identifikasie te kan maak.

'n Baie bruikbare stuk gereedskap om hiermee te help is die kennis en toepassing van die hout se anatomie. Hiermee word bedoel die bestudering en uitkenning van die houtweefsel op mikroskopiese vlak. Prof Burger het aangedui dat inligting verkry met behulp van 'n 10X vergroting handlens in die meeste gevalle voldoende kan wees om 'n positiewe identifikasie te maak. Daarvoor het mens natuurlik 'n betroubare verwysingsbron van die anatomiese kenmerke nodig om met die identifisering te help.

In sy boek **Applied Plant Anatomy**, stel **dr. David Cutler** van die Jodrell Laboratorium by Kew in Engeland die belangrikheid in die toepassing van plantanatomie soos volg:

"Plant anatomy is regarded as a dull subject by many students because the tradition has been to teach it as a catalogue of cell and tissue types with only slight reference to function and development, and no mention of the day-to-day use to which this knowledge is put in many laboratories round the world.

At Kew, plant anatomy is in everyday use as a tool to help in solving baffling problems – many of economic value and a good number of scientific interest. As such the subject becomes alive and fascinating. We also apply anatomy to help solve rather more academic questions of the probable relationships between plant families, genera and species. The incorporation of anatomical data with the findings from studies on gross morphology, pollen, cytology, chemistry and similar disciplines enable those making revisions of the classification of plants to produce more natural systems.

The economic significance of accurate classification and hence accurate identification of plants is frequently overlooked. The plant breeder, the food grower, the ecologist and conservationist all need accurate names for the subject of their study. The chemists and pharmacognosists searching for new chemical substances must certainly know exactly which species or even which varieties yield valuable substances. Without an accurate name and description, they cannot repeat their experiments, or obtain further plant material of the same species, or know which closely related plants might be examined for similar properties.

Most samples sent to Kew for anatomical identification consists wholly or mainly of wood.

The samples are derived from many different sources and can be broadly divided into wood of recent origin and archaeological material. Furniture is made from wood carefully selected for their appearance and strength. Fashions have changed and it is common for certain species to have been selected for a period and then superseded by others. In addition, some woods were unavailable at certain periods. Consequently, by knowing which species were involved in the manufacture of antique furniture, it may be possible to date the piece and occasionally the furniture expert may be able to get a good idea of who made it. Some craftsmen worked only with a carefully selected, characteristic range of wood. When repairs are necessary, it is also helpful to know which species should be used. The only way of being absolutely certain which woods were used is, in most instances, by making a

microscopical study. Those who claim to be able to identify woods "on sight" are either extremely experienced or overbold, and many make errors.

We are occasionally asked to suggest substitute woods for some special purpose, when the supply of the normally used species has ceased. This can be difficult but it is sometimes possible to suggest other species, which from their anatomical make-up might be expected to have similar properties. Wood used as a backing for paintings is often brought to the laboratory. The purpose in finding out the identity is often related to establishing the name of the artist or the country of origin. In our time we have examined the wood from a good many walking sticks; an amazingly wide range of species has been used for this purpose.

Considerable damage is caused every year to buildings by the action of roots of trees. There may be a number of different tree species near to the buildings concerned. All or some of them might have roots beneath the foundations. It would be excessively expensive to try and trace the roots back to their parent trees by excavation. Fortunately it is possible to identify most roots of trees growing in the British Isles from aspects of their root anatomy, largely from features of the secondary xylem.

At the Jodrell Laboratory we also look at archaeological material from all sorts of wooden objects; spear shafts, shields, buckets, right through to structural timbers as well as pieces of wood or charcoal in sites of antiquity. Much of this work is very time consuming. An oak, Iron Age boat from Brigg in South Humberside proved to be fascinating. No 'nails' were used to secure one timber to another, but the main logs were sewn together with twisted willow twigs (*Salix babylonica*) passed through regularly pierced holes along the edges of the baulks of timber.

Forensic work often involves the identification of small pieces of plant material other than wood, although in addition to safe ballast, wood splinters might come from such things as windows, doors and their frames, weapons and the like, and thus play an important role in police work. A wide range of particles of plants may become attached to clothing or footwear which relate to the scene of a crime. Anatomical characters can be used with such confidence for identification that they may contribute part of the evidence given under oath in court."

Houtanatomie is 'n afgeskepte disipline in Suid-Afrika en daar is tans min be-oefenaars daarvan. Gelukkig het ons die nalatenskap van Dr C P Kromhout wat vir baie jare baanbekerswerk in houtanatomie vir die S.A. Navorsingsinstituut vir Bosbou gedoen het. Hy het besonder baie gepubliseer oor veral die houtanatomie van ons inheemse boomsoorte. In sy dogter, mev Stephnie Dyer, het ons gelukkig iemand wat die inhoud van hierdie monumentale werk kan gebruik en toepas. Mag sy goeie ondersteuning van die houtwerkgemeenskap, en veral die draaiers, kry om die belangrikheid van hierdie werk te vestig en voort te sit.

Lou Coetzer  
PRETORIA