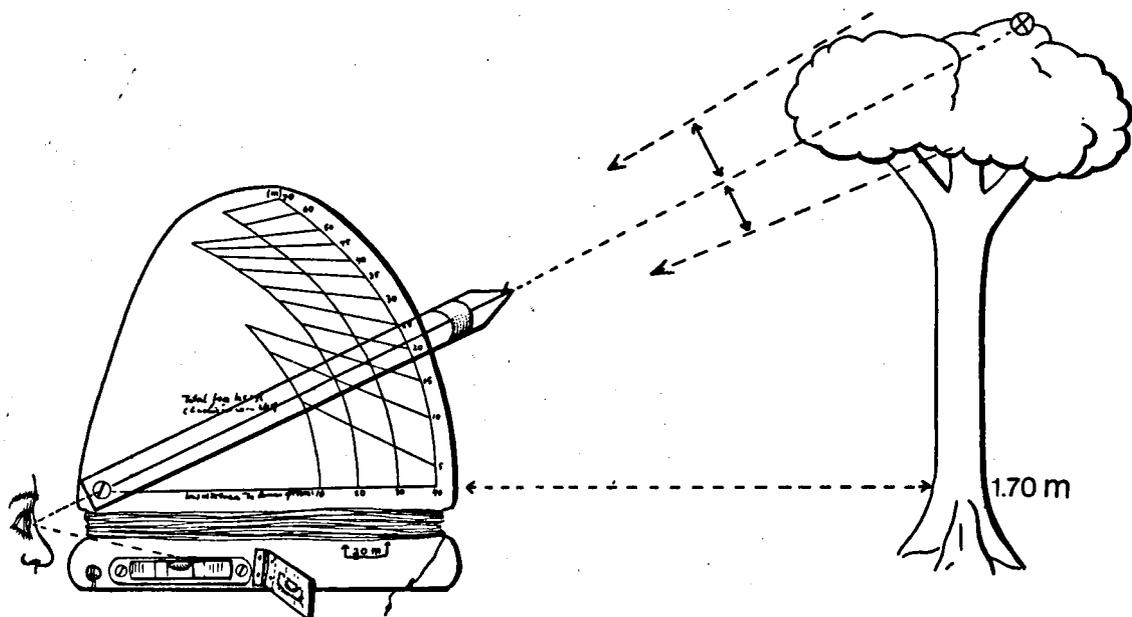


VIII. A DO-IT-YOURSELF ALTIMETER FOR TREES

Commercially available tree altimeters are expensive and heavy, and my personal experience with these instruments is thus minimal. During my last expedition I only used it now and then in the base camp to correct my 'feeling for estimation'. I have little doubt that colleagues will recognize these feelings. After my return I regretted this attitude to some extent and tried to design a cheap and light alternative device. It is drawn on the next page, and easy to construct:

Make a copy of the drawing. Photocopies are generally not exact enough, causing differences to 5 m in this scheme, due to barrel- and cushion-shaped distortion by the lens. I advise to copy the drawing by hand on transparent paper. Glue this copy (preferably with epoxy-resin to make it waterproof) on hardboard (plexiglass, thin aluminium). Fix a water-level parallel to the horizontal line (which indicates c. 1.70 m eye-level!). Attach a transparent ruler with a thin but distinct straight line. This ruler is attached with a (nylon) bolt and nut (the latter fixed with cyano-acrylate, e.g. Loctite) in order to move the ruler to reach the necessary angle and to keep it in a fixed position easily. It needs some training to keep the righthand eye on the water-level (a small mirror may help here), the accuracy is sufficient when one sees the air-bubble moving or trembling. A much more severe factor causing inaccuracy is the impossibility to estimate in larger trees where the actual summit is hidden behind the crown. When impossible to locate, one can use the rule of thumb,



that the actual summit is behind a point about halfway the base and the edge of the crown. An attached string of e.g. 20 metres facilitates to fix the horizontal distance. From the scale it is evident that one should not try to measure a 50 m tall tree from 20 m distance, 40 m is more accurate. The exactness of the device is mainly dependent on the length of the ruler, 25-30 cm is needed. Before fixing the water-level definitively, one should gauge its position by means of a tree or other vertical object (flagpole) of known height.

Good luck with the construction is wished by:

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