GLOSSARY

The intolerable wrestle with words and meanings.
Eliot : East Coker

ANTHESIS. Flowering, when pollen is released from the anthers.

AVAILABLE SOIL MOISTURE. The amount of water that plant roots could extract from the soil at any time.

BACKCROSS. A cross between a hybrid plant or animal and one of its parental lines.

BASE TEMPERATURE. The temperature below which the process being considered is unable to proceed.

BETA-GLUCAN. A complex substance (a polymer of glucose) which in malts of some barley cultivars may cause problems in filtering beer.

CHEMICALS

Bayleton (triadimefon)
Baytan F17 (triadimenol plus fuberidazole)
Dithane M45 SD (mancozeb)
Fungazil (imazadil)
Tilt (propiconazole plus triadimefon)
Vitaflo 200 (carboxin plus thiram)

CHROMOSOME. One of the set of microscopic bodies visible in the nucleus of a cell at the time of division; they carry most of the genetic information.

COEFFICIENT OF VARIATION. A number calculated in some statistical analyses which indicates whether a set of figures (e.g. yields) is showing a normal amount of unexplained variation.

COLCHICINE. A drug which prevents cells from completing a normal mitotic division (q.v.) so that the set of chromosomes in the cell is duplicated.

COMPOUND CROSS. A cross in which at least one of the parents is an early generation hybrid, usually F1.

DIPLOID. Having two of each basic type of chromosome in the cell nucleus.

DISEASES are listed by their common and scientific names in Paper 8.

EPICOTYL. The part of the seedling stem between the cotyledon and the next leaf.

ERECTOID. A type of barley with short straw and ears erect at maturity.

F1, F2, ... A filial generation in a breeding programme, the number showing the number of generations since the creation of variability by hybridisation.

GAMETE. A reproductive cell. A male and a female gamete fuse to form a cell which develops into a new individual.

GLUME. One of a pair of empty bracts at the base of a grass spikelet. In barley the glumes are reduced to bristles.

GROWTH STAGE. A name given to one of the stages of development, not growth, of a plant. The first widely accepted system for numbering the stages in sequence was developed by the late Dr Feekes of the Netherlands.

HAPLOID. Having a single set of unpaired chromosomes in each cell nucleus.

HARTONG EXTRACT. A measure of the amount of fermentable material produced in the grain during malting. A measure of modification (q.v.).

HARVEST INDEX. The ratio of weight harvested in grain to total above-ground weight in a crop. Generally means weight of grain divided by total yield, but may be used, for example, for nitrogen content of grain and whole crop.

HOMOZYGOUS. Having identical genes in the two corresponding positions of a pair of chromosomes. Incapable of showing genetical segregation.

IMBIBITION. The action of taking up water.

ISOGENIC LINES. Lines bred to be almost completely homozygous except for one or a few important genes and some small adjacent sections of chromosome.

LAUTERING. The process of separating fine particles from wort (q.v.) after mashing, by settling or filtering.

LEMMA. The lower of the two bracts enclosing the flower. In most barleys it becomes firmly attached to the developing grain, and extends into the long awn.

LODICULE. One of a pair of minute scales outside the stamen and ovary.

LUDECKE-RAVENSDOWN TEST. A test carried out to provide a recommendation for rate of application of nitrogenous fertiliser.

LUNDIN FRACTION. One of the classes of soluble nitrogen-containing compounds in malt. Three fractions are defined by their solubility in the presence of tannins and phosphomolybdic acid.

MEIOTIC DIVISION. Two successive cell divisions of a special kind, with only one duplication of the chromosomes. Each of the four daughter cells thus has half the number of chromosomes of the parent cell.

MESOCOTYL. The part of the seedling stem between the scutellum and the coleoptile.

MITOTIC DIVISION. The process by which the cell nucleus divides into two by the separation of duplicated chromosomes so that the two daughter nuclei each get a complete set.

MODIFICATION. The processes occurring during malting, including the breakdown of cell walls, the degradation of protein, and the development of starch-digesting enzymes.

MULTILINE. A heterogeneous cultivar consisting of a number of similar and closely related strains, each having genetically different resistance to some disease or pest.

PEDIGREE BREEDING. A plant breeding procedure involving single plant selection and comparison of subsequent families in one or more early generations (e.g. F2 and F3). Normally preferred to bulk breeding, in which all material from a cross is exposed to chance and natural selection for several generations before individual plants are selected and increased for commercial evaluation.

PROXIMATE COMPOSITION. A description in terms of the content of each of the major classes of nutriment in a food-stuff. One component, usually the digestible carbohydrate, is determined by subtracting all other percentages from 100.

QUANTITATIVE CHARACTER. An inherited character in which the variation is not all explained by simple genetic differences or the effects of variation in growing conditions. Also known as multigenic or polygenic.

RANDOM SEGREGATION. The independent assortment of pairs of genes from different chromosomes in the formation of gametes (q.v.), which ensures that the characters controlled by the genes segregate at random (see Segregating Populations).

RECOMBINATION. The formation of new combinations of genes by the processes of meiosis.

RECURRENT SELECTION. A breeding technique in which selections are made and intercrossed after a few generations of self-fertilisation, before they can be considered to be fixed lines. The object is to reduce the number of plants evaluated while having a good chance of identifying lines with scarce and valuable combinations of genes.

SEGREGATING POPULATION. A population in which changes in combinations of inherited characters continue to appear from generation to generation.

SINGLE-SEED DESCENT. A technique of passing a self-fertilising population rapidly through several segregating generations in a controlled environment. By growing small plants and harvesting only one seed per plant it is hoped to produce a random assortment of genetic combinations in a fairly homozygous state.

SIX ROW BARLEY. A type in which each of the three spikelets that develop at each node of the stem of the ear is fertile. The three grains may be similar in size or the central grain may be the largest.

TWO ROW BARLEY. The common type in Australasia and Northern Europe, in which the lateral spikelets at each node are sterile, so that the ear carries two rows of median grains.

VERNALISATION REQUIREMENT. The need of winter cereals for a period of low temperature treatment before they will develop to the flowering stage. Normally satisfied by sowing them in the autumn or winter. Formerly exploited in the Soviet Union by Dr Lysenko to avoid destalinisation.

UNICULM BARLEY. A type in which each plant produces only one ear. Capable of producing a crop with a prescribed optimal ear density as soon as a way is discovered to predict establishment rate.

WEEDS:

annual meadow-grass — *Poa annua* L.
barren brome — *Bromus sterilis* L.
black grass — *Alopecuris myosuroides* Huds.
Californian thistle — *Cirsium arvense* (L.) Scop.
couch — *Agropyron repens* (L.) Beauv.
fathen — *Chenopodium album* L.
meadow brome — *Bromus commutatis* Schrad.
slender foxtail — see black grass
tare — *Vicia angustifolia* L.
wild oat — *Avena fatua* L.
— *Avena ludoviciana* Dur.
wild turnip — *Brassica campestris* L.
willow weed — *Polygonum persicaria* L.

WORT. The unfermented hot water extract of malt.