

THE IDENTIFICATION OF CIDER APPLES

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INTRODUCTION

The formulation of a system for the identification of pome fruits has been attempted by many pomologists. Hogg (1860) and others based their keys on an arbitrary classification of the characters of tree and fruit which were considered to be least variable. Bunyard (1920) preferred to use more natural groups based on the external appearance of the fruits. Vercier (1934) and Durham (1934), both of whom worked with cider fruit, attempted the construction of a numerical code or index. Basically all these schemes involve a preliminary grouping of varieties, as an attempt to approach the genetical classifications that botanists have been able to develop for other plants. The present authors consider that English cider apples would present similar difficulties to those found by Williams and Faulkner (1962) with perry pears and offer little opportunity for a useful grouping and any attempt at this would only reduce the chances of making an accurate identification.

An attempt has been made to discover the extent of year to year and orchard to orchard variations in fruit characters within and between varieties during a period of ten years by recording on standard sheets the complete external and internal anatomy of numerous samples. From data obtained in this way, descriptions of thirty-three varieties have been published (Williams and Child, 1962-1965). Using these descriptions and records made for a further forty varieties, a dichotomous key based on characters found to be the least variable has been constructed for the identification of seventy-three cider apple varieties.

As a result of differences in management, tree characters were found to vary quite considerably within varieties. For example a popular variety may exist as pruned or unpruned bush or standard trees, or it may be headworked onto an existing framework by any of several methods which vary from county to county. Thus tree characters have only been used to help to distinguish between very similar varieties such as those in the Woodbine group which are difficult to separate on fruit characters alone.

CHARACTERS USED IN THE KEY

A variety is identified by using the least variable characters and allowance is made for variations by providing more than one route through the key. The extent to which variations have been found to occur is exemplified by the possibility of naming fruits of Sherrington Norman by using any of nine routes in the key.

With many varieties allowance must be made for the fact that fruits from young trees are large and lacking in flush and also that fruits from mature trees in an "off" year are large and early maturing. King fruits are often

atypical and occur more frequently in some varieties in the "off" year; their shape tends to be more elongated, ribbing is pronounced, and the stem is often shorter and thicker.

Size

If the diameter is less than two inches, the fruit is described as small; if greater than two and a half inches, the fruit is large; a medium fruit has a size between these two values. Allowance should be made for reduction in fruit size following an early severe build-up of scab.

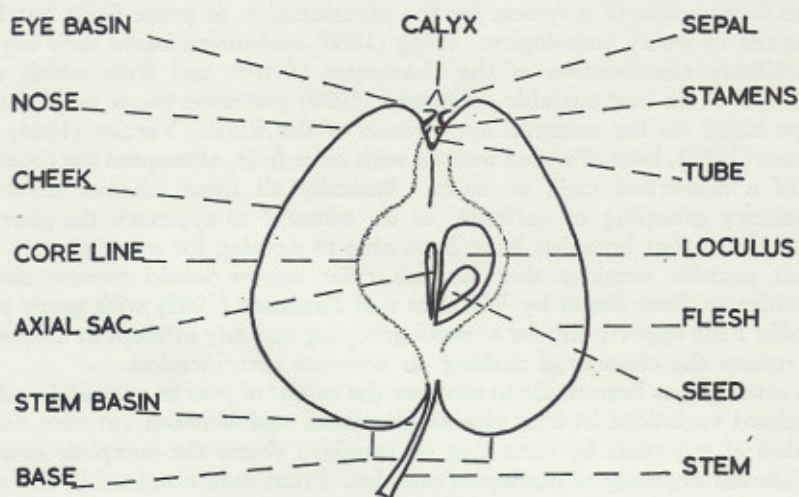


Fig. 1. A longitudinal section through an apple.

Shape (Plate I)

More than one basic shape may be present in a sample; thus the king fruits of Yellow Styre are sometimes cylindrical but the lateral fruits are always oblate. This variability in shape was not realised by Hogg who described Black Taunton (a synonym of Kingston Black) as a separate variety.

The fruit base is an important character of cider apples. A wide base such as is found in Yarlington Mill is a constant feature in all fruits of this variety. Narrow based varieties such as Cherry Norman, Lavignéc and Tremlett's Bitter are quite distinct although the king fruits are sometimes more irregular and tend to have wider bases than the lateral fruits.

The "waisted" type of fruit shape is typical of many of the Somerset bitter-sweet Jersey apples such as Harry Masters Jersey and Yarlington Mill. Fused fruits are rarely found in several varieties but are always present in Porter's Perfection.

Stem (Plate II)

Stem length varies only slightly within a variety, it is consequently a useful feature for identification.

Stem basin (Plate II)

The size of the stem basin is measured in relation to the size of the fruit. Thus similar dimensions may be called small in large fruits but large in small fruits. This character is used infrequently because it is difficult to assess. An irregular stem basin flattened on one side occurs in Backwell Red.

Eye basin (Plate III)

The size and, in particular, the depth of the eye basin is variable in most varieties, only three categories of eye basin are therefore used for diagnostic purposes: absent, slight or present, and very deep. A corona is a constant feature of Breakwell's Seedling and is sometimes present in other varieties. Puckering and ribbing are frequently important in identification.

Calyx

This is often useful, Sherrington Norman for example always has very distinctive sepals which are large, long and reflexed.

Skin (Plate IV)

Five characters are important: the presence or absence of wax; the position and quantity of russet; the background colour of the skin; the type, colour and quantity of flush; and the conspicuousness of the lenticels. The quantity of wax varies with the ripeness of the fruit, usually being present in larger quantities on very ripe fruits which have been lying in the grass. The location of russet is especially important, for example the distinct patch of russet surrounding the eye basin in Brown Snout is a diagnostic character. The nature of background colour and flush varies only slightly from year to year but it is necessary to assess these characters with regard to the age of the tree and bearing in mind that the fruits protected by leaves tend to be greener and have less flush. Lenticels are a conspicuous feature of some varieties and are important diagnostically. The skin immediately surrounding each lenticel may be colourless giving a white dotted appearance to the skin, or it may be flushed or russeted.

Internal Characters

The structural characters of the tube were found to vary within varieties to such an extent as to make them of little diagnostic value. There are only a few exceptions, for example the constricted funnel of Reine des Hâtives.

The position of the stamens in the tube is described as proximal, median or distal in relation to the base of the fruit. The loculi in the core are sometimes distinctly shaped in longitudinal section being either: round; elliptical; or obovate, that is having the widest portion nearest the eye of the fruit.

Harvesting

Cider apple harvesting extends from September until December. Unlike dessert apples which are harvested from the tree when the fruit can be picked easily, cider apples are harvested from the ground when the majority of fruits are falling freely.

A KEY FOR THE IDENTIFICATION OF SEVENTY-THREE
CIDER APPLE VARIETIES

Not less than twenty fruits should be used when attempting to identify a variety. This number should preferably be sampled randomly when the fruit is falling freely.

1	Many fruits fall in September	2
	No fruits fall before October	20
2	Sharp or bitter-sharp	3
	Sweet or bitter-sweet	12
3	Corona usually present; will not keep; earliest of sharp cider apples	BREAKWELL'S SEEDLING
	Corona absent or sometimes present	4
4	Flush absent or very slight	DUFFLIN
	Flush present	5
5	Small; regular, round or oblate; dark red flush	FREDERICK
	Variable; usually medium or large; conical or flattened-conical; flush bright or dark red	6
6	Dark red flush, some fruits without conspicuous stripes	BACKWELL RED
	Bright red flush, conspicuous stripes on most fruits	7
7	Stem long, never within stem basin	8
	Stem usually short and within stem basin	11
8	Stem swollen at junction with fruit	IMPROVED FOXWHELP
	No swelling of stem at junction with fruit	9
9	Full sharp, some astringency	BULMER'S FOXWHELP
	Medium sharp, culinary flavour, sometimes slight astringency	10
10	Flush usually two-thirds or less, yellow background prominent	OLD FOXWHELP
	Flush usually complete or almost complete; flesh may be flushed red	RED FOXWHELP
11	Russet confined to stem basin, slight, rarely cracked	BULMER'S FOXWHELP
	Russet often spreading over cheek, often cracked and heavy in stem basin	RUSSET FOXWHELP
12	Heavy dark red flush always present, some striping	13
	Flush absent or diffuse with slight flecking	14
13	Base broad; lenticels not prominent, rarely russeted; no tendency to "waisting"; stem usually level with base or within stem basin	ELLIS BITTER
	Base narrow; lenticels prominent, russeted; tendency to "waisting" forming "snout"; stem usually slightly projecting	TREMLETT'S BITTER
14	Astringency absent	MORGAN SWEET
	Astringency present	15
15	Tube usually constricted funnel	REINE DES HÂTIVES
	Tube not usually constricted funnel	16
16	Base narrow	17
	Base broad	18
17	Nose flattened; shape basically round	CHERRY NORMAN
	Nose flattened; often cylindrical, sometimes round, never conical	SHERRINGTON NORMAN
	Nose pointed; shape basically conical	WHITE JERSEY
18	Becoming very yellow in September; prominent lenticels	NEHOU
	Green or greenish-white in September	19

19	Medium or large; green or greenish-yellow; sepals not exceptionally large	BULMER'S NORMAN	
	Small or medium; greenish-yellow; flush, if present, flecked; sepals exceptionally large	SHERRINGTON NORMAN	
	Small or medium; white or greenish-white; flush, if present, diffuse; sepals not exceptionally large	WHITE NORMAN	
20	Sharp or bitter-sharp		21
	Sweet or bitter-sweet		58
21	Flush only diffuse or absent		22
	Flush flecked, striped or complete		35
22	Very prominent lenticels		23
	Lenticels not an outstanding character		29
23	Stem within stem basin or level with base		24
	Stem projecting distinctly or considerably		26
24	Stem usually absent; irregular; eye basin often strongly ribbed	GIN	
	Stem present; regular; eye basin never strongly ribbed		25
25	Usually round, sometimes cylindrical; russet usually heavy in stem basin only	REINETTE OBRY	
	Oblate, king fruits sometimes cylindrical; russet often considerable on cheek	YELLOW STYRE	
26	Lenticels on flush usually surrounded by light coloured area		27
	Lenticels on flush never surrounded by light coloured area		28
27	Fused fruits not usually present; scab and die-back usually severe	CAP OF LIBERTY	
	Fused fruits usually present; scab and die-back not usually severe	PORTER'S PERFECTION	
28	Flush always present on some fruits, always flecked but not associated with lenticels; inclined to conical. Flush sometimes present, flecking if present associated with lenticels; inclined to oblate	FAIR MAID OF DEVON	
29	Stem projecting considerably	REINETTE OBRY	30
	Stem projecting slightly or level with base		32
30	Usually oblate; stem only projects slightly	YELLOW STYRE	
	Round or conical; stem projects distinctly or considerably		31
31	Flush absent or rare	DUFFLIN	
	Flush usually present	FAIR MAID OF DEVON	
32	Flush absent or usually less than two-thirds		33
	Flush always present, usually more than two-thirds	CRIMSON KING	
33	Stem usually absent	GIN	
	Stem usually present	YELLOW STYRE	
34	Length always greater than breadth	CIDER LADY'S FINGER*	
	Length not always greater than breadth		35
35	Stem usually level with base or within stem basin		36
	Stem usually projecting distinctly		44
36	Nearly always oblate and regular		37
	Many fruits not oblate		39
37	Calyx usually closed; stem thin	STOKE RED	
	Calyx often open; stem thick		38
38	Usually medium; flush red; eye slightly open	BROWN'S APPLE	
	Some fruits always small; flush pink-orange; eye open	LAMBROOK PIPPIN	
39	Eye open		40
	Eye closed		42

* The name Lady's Finger is applied to a number of local varieties all of which are characterized by their shape which is elongated cylindrical.

40	Harvest October; pronounced stripes usual; trace of corona often present; loculi medium sized	11
	Harvest November; striping not prominent; trace of corona uncommon; loculi small	41
41	Stamens proximal; skin smooth usually slightly waxy; large or medium sized	CRIMSON KING
	Stamens median; skin usually dry, sometimes rough; small or medium sized	KINGSTON BLACK SKYRME'S KERNEL
42	Some apples conical and "waisted".	43
	No "waisted" fruits present	COWARNE RED
43	Eye basin puckered or ribbed; stamens median	STOKE RED
	Eye basin smooth and regular, sometimes slightly puckered; stamens distal	
44	Lenticels large, surrounded by prominent light area on unflushed portions of some fruits.	45
	Lenticels not always large, not surrounded by light area	46
45	Oblate; eye open.	LAMBROOK PIPPIN
	Not often oblate; eye usually closed	27
46	Stem basin absent or slight; stem swollen at junction with fruit	47
	Stem basin present and well defined	48
47	Flush very striped.	IMPROVED FOXWHELP LANGWORTHY
	Flush flecked only	
48	Distinctly oblate	37
	Basically round or conical	49
49	Flush heavy, dull dark red, many fruits predominantly diffuse	50
	Flush not always heavy, orange-red, most fruits predominantly striped or flecked	52
50	Normally harvested November onwards	STOKE RED
	Normally harvested before end of October	51
51	Tending to cylindrical; flush flecked and slightly striped; stem basin often flattened on one side	BACKWELL RED
	Round or tending to oblate; flush heavy, flecking predominant but slightly striped; stem basin small	FREDERICK
	Tending to cylindrical; prominent bright red stripes; small to medium sized stem basin; very acidic	RED FOXWHELP CHERRY PEARMAIN
52	Suitable for eating	53
	Unsuitable for eating	STOKE RED
53	Harvesting from November onwards	54
	Harvesting before end of October	55
54	Flush predominantly striped	56
	Flush if present, flecked or diffuse	HEREFORD REDSTREAK
55	Conical, regular; sepals usually fairly long	9
	Conical-cylindrical; often irregular; sepals usually short	HEREFORD REDSTREAK
56	Corona usually present; large stem basin	FAIR MAID OF DEVON
	Corona not usually present; stem basin medium sized to absent	
57	Flush diffuse with no trace of flecking or striping, or absent	58
	Flush present, flecked, striped or complete	95
58	Stem basin large, both wide and deep	59
	Stem basin small or slight or absent	75
59	Pure sweet	60
	Tannin present, often heavy	62
60	Often elongated or conical-cylindrical	SWEET COPPIN
	Often flattened or flattened-conical	61
61	Stem usually within stem basin or level with base	ROYAL WILDING
	Stem usually projects considerably	SWEET ALFORD

62	Usually small sometimes medium sized, only rarely large	63
	Usually medium sized or large, only rarely small	70
63	Strongly and distinctly ribbed	64
	Ribs absent or not distinct and not always present	67
64	Russet confined to stem basin, rarely present around eye, absent from cheek	SHERRINGTON NORMAN
	Russet sometimes present on cheek as network or trace	65
65	Skin yellowish-white when ripe, light greenish-yellow when immature; very susceptible to scab	WHITE NORMAN
	Skin yellowish-green when ripe, green when immature; scab rare	66
66	Brown appearance due to flushing and heavy russet on cheek	BROWN THORN
	Colour green or yellowish-green, flush rarely present—pink	MICHELIN
67	Russet heavy, in patches on cheek, sometimes covering fruit	MÉDAILLE D'OR I
	Russet light, network only if present on cheek	68
68	Russet present as distinct patch around eye basin	BROWN SNOUT
	Russet not present as distinct patch around eye basin	69
69	Skin yellow or greenish-yellow; loculus elliptical or round; seeds often few; stamens median	SHERRINGTON NORMAN
	Skin yellowish-white; loculi obovate; seeds numerous; stamens distal	WHITE NORMAN
70	Skin green, dry and rough due to network of russet and absence of wax	71
	Skin greenish-yellow, smooth, not always dry as wax is frequently present	72
71	Conical, rarely flattened; heavy scaly russet not present in stem basin	BROWN THORN
	Oblate, always flattened; heavy scaly russet always present in stem basin	PENNARD BITTER
72	Distinct patch of russet present around eye; regular, no ribbing	BROWN SNOUT
	No large amount of russet around eye, not very regular, ribbing often present	73
73	Cylindrical or round; sepals, if unbroken, large and reflexed; flush usually present	SHERRINGTON NORMAN
	Conical; sepals not large; flush usually absent	74
74	Eye small	MICHELIN
	Eye large	BULMER'S NORMAN
75	Base narrow in all fruits	76
	Base wide in most large fruits	82
76	Not elongated; round or flattened or irregular, rarely conical	77
	Elongated, cylindrical or conical	79
77	Frequently irregular, sometimes rather distorted; medium sized, sometimes small	LAVIGNÉE
	Regular, except in "off" year samples; small or sometimes very small, rarely medium sized	78
78	Stem bulges at junction with fruit	CHERRY NORMAN
	Stem does not bulge at junction with fruit	HANGDOWN
79	Puckering and ribbing rare or absent, eye basin well defined and smooth	SWEET COPPIN
	Puckering and ribbing usually present, eye basin irregular, or ill-defined and slight	80
80	Medium sized; light green or yellowish-green; stem green and thick	BELLE NORMAN
	Small, rarely medium sized; yellow or pale yellow; stem usually brown and thin	81

81	Nose pointed, flush not usually present	WHITE JERSEY	
	Nose broad, flush often present	CUMMY NORMAN	
82	Strongly and distinctly ribbed		83
	Ribs not distinct, not always present, or absent		89
83	Russet often spreading as network on cheek, sometimes considerable		84
	Russet confined to stem basin, rarely spreading on to cheek		87
84	Tending to flattened		85
	Tending to elongated		86
85	Medium sized or large; skin green	PENNARD BITTER	
	Small, rarely medium sized; skin yellowish-white	WHITE NORMAN	
86	Thin trace of russet usually present over fruit, no concentration in stem basin; flush, when present, brown	BROWN THORN	
	Russet rarely spreading to cheek, usually confined to stem basin and scaly; flush when present, pink	MICHELIN	
87	Nose pointed	MICHELIN	
	Nose not pointed		88
88	Sepals not exceptionally long; seeds numerous; flush, when present, always diffuse; loculi obovate	HANGDOWN	
	Sepals usually very long and reflexed; seeds few; flush usually present, tendency to flecking; loculi round or elliptical	SHERRINGTON NORMAN	
89	Conical or flattened, tendency to cylindrical rare; russet frequently spreading to cheek from stem or eye; small, sometimes medium sized		90
	Cylindrical or conical-cylindrical; russet usually confined to stem basin, rarely present on cheek; usually medium sized, sometimes large or small		92
90	Skin pale yellow, almost white by late October	WHITE NORMAN	
	Skin yellow or yellowish-green		91
91	Distinct patch of russet around eye usual; does not bruise prominently	BROWN SNOUT	
	No distinct patch of russet around eye; bruises prominently	HANGDOWN	
92	Some sepals long and prominent	SHERRINGTON NORMAN	
	Sepals rarely long and prominent		93
93	Bruises prominently; eye basin usually puckered	HANGDOWN	
	Does not bruise prominently; eye basin usually smooth		94
94	Tannin present, sometimes light	ROYAL WILDING	
	Tannin absent	SWEET COPPIN	
95	Stem usually within stem basin or level with base, occasionally projecting slightly		96
	Stem projecting distinctly, rarely only slightly		109
96	Sweet, lacking tannin or very mild		97
	Bittersweet, tannin present		100
97	Large or medium sized; stem basin wide		98
	Small or medium sized, rarely large; stem basin narrow		99
98	Flush orange-red or bright red; stem within cavity, thick and fleshy; seeds few	COURT ROYAL	
	Flush pink-red, rarely orange-red; stem projecting slightly, medium thickness; seeds numerous	NORTHWOOD	
99*	Tree framework compact consisting of numerous limbs	SLACK-MA-GIRDLE	
	Tree framework consists of a few long spreading limbs	WOODBINE	

* Fruit characters alone are insufficient to distinguish these two varieties.

100	Russet present on cheek as network, sometimes in patches or associated with lenticels; eye basin smooth, ribs absent	101
	Russet present in stem basin only, sometimes spreading lightly on to cheek; ribbing, when present in eye basin, spreads over cheek	103
101	Russet heavy, streaks which often coalesce into patches especially in eye basin; lenticels not prominent and not russeted	
	Russet light, small patches, sometimes associated with lenticels, occasionally present as network, never heavy in eye basin	102
102	Local small, seeds fill cavities	
	Loculi medium to large, seeds do not fill cavities	
103	Flush virtually complete	104
	Flush usually less than two-thirds	106
104	Large, rarely medium sized; skin waxy; eye basin deep; lenticels inconspicuous; core usually slightly proximal	105
	Medium sized, small or very small, rarely large; skin dry; eye basin shallow; lenticels conspicuous; core median	137
105	Numerous small flecks or dots give characteristic flush; nose often flattened	
	Flush more diffuse than flecked, flecks not outstanding; nose often pointed	
106	Skin pale yellow or greenish-yellow; harvest before end of October	
	Skin green or greenish-yellow; harvest after end of October	107
107	Eye basin shallow or slight; usually very waxy	108
	Eye basin deep and steep sided	
108	Usually very waxy, bruises quickly and easily	
	Not usually very waxy, bruises do not show quickly	
109	Flush less than two-thirds	110
	Flush usually more than two-thirds or virtually complete	122
110	Tannin absent, pure sweet	111
	Tannin present, bitter-sweet	114
111	Stem basin shallow, not steep sided; calyx slightly open or open	
	Stem basin steep sided, often deep; calyx slightly open or closed	112
112	Flattened-cylindrical or tending to round	
	Conical; nose often pointed	
113	Unbroken sepals long; flesh has slight banana flavour	
	Unbroken sepals short; no banana flavour	
114	Base narrow and rounded	115
	Base broad and flattened	118
115	Thin trace of russet usually present over fruit; flush predominantly diffuse, brown	
	Russet, if present, confined to eye or stem basin; flush predominantly flecked, red	116
116	Cylindrical, tending to round; sepals sometimes prominent and long; nose flattened	
	Conical, tending to cylindrical, sepals not usually long; nose not flattened	117
117	Mature in October; skin greenish-yellow	
	Mature by end of November; skin green	
118	Thin trace of russet over fruit, sometimes heavy	119

	Russet, if present, confined to eye or stem basin or slight on cheek only	120
119	Skin green or yellowish-green; stem basin usually one sided, sometimes free of russet	BROWN THORN
	Skin pale yellow; stem basin regular, sometimes heavily russeted and cracked	WHITE CLOSE PIPPIN
120	Skin dark green or green; flattened or oblate	VILBERIE
	Skin yellowish-green; conical or cylindrical	121
121	Nose flattened	SHERRINGTON NORMAN
	Nose pointed	YARLINGTON MILL
122	Sweet, tannin absent	123
	Bitter-sweet, tannin present	124
123	Stem basin shallow, not steep sided; calyx slightly open or open	NORTHWOOD
	Stem basin steep sided, often deep; eye slightly open or closed	113
124	Base narrow and rounded	125
	Base wide and flattened	129
125	Cylindrical, tending to round; nose flattened; eye basin wide; sepals large and reflexed	SHERRINGTON NORMAN
	Conical, sometimes tending to cylindrical; nose pointed; eye small not usually wide	126
126	Mature during November or December	127
	Mature before beginning of November	128
127	Conical, tending to flattened-conical; skin yellowish-green	FRÉQUIN ROUGE
	Elongated-conical, tending to cylindrical; skin green	TARDIVE FORESTIER
128	Flush predominantly flecked, orange-red	MAJOR
	Flush predominantly diffuse, dark red	TREMLETT'S BITTER
129	Flattened-conical, tending to oblate	130
	Not flattened-conical, not tending to oblate	137
130	Stem usually offset; maximum diameter close to base	131
	Stem not usually offset; maximum diameter not close to base	132
131	Flush predominantly diffuse, light red tending to brown	CHISEL JERSEY
	Flush strongly flecked or striped, dark red	DABINETT
132	Sepals long and reflexed	133
	Sepals usually short	134
133	Usually conical, tending to cylindrical	SHERRINGTON NORMAN
	Usually conical, tending to oblate	STEMBRIDGE JERSEY
134	Fruits usually angular	135
	Fruits not usually angular	136
135	No patterned russet on cheek; stem very long	KNOTTED KERNEL
	Patterned russet on cheek; stem not exceptionally long	REINE DES POMMES
136	Flush heavy, prominent flecks and stripes	DABINETT
	Flush heavy, mainly diffuse; fruit sometimes severely russeted or cracked	SANDFORD JERSEY
137	Tendency to "waisting" giving "snout"; flush often with bluish tinge	138
	No tendency to "waisting", no bluish tinge to flush	139
138	No strong aroma	HARRY MASTER'S JERSEY
	Strong aroma	YARLINGTON MILL
139	Some sepals long and reflexed	140
	Sepals usually short	134
140	Seeds almost fill loculi, large; flush brownish-red; flesh tending to yellow	RED JERSEY
	Seeds do not fill loculi; flush red or pink-red; flesh very white	133

There are many cider apple varieties existing in limited numbers which are not included in the key. Those included have all been recommended by Long Ashton Research Station or by Cider Makers during the last fifty years and constitute the bulk of present day orchards. They are found in reasonable numbers, but some, such as the Foxwhelps, may be rapidly dying out. Very few of them are recommended for present day planting, as may be seen from the latest recommendations of the Cider Advisory Committee in 1956.

The dates shown in brackets following the name of some of the varieties indicate the year of publication of the full fruit descriptions by the authors.

Trial orchards mentioned refer to the variety trials propagated by Long Ashton Research Station during the past fifty years and found in all major cider growing counties.

- Ashton Brown Jersey** (1961) . . . Distribution: standard and bush trial orchards in all cider growing counties, some recent plantings in Herefordshire and Somerset. Mature tree characters: medium to large sized with a stiff upright habit. Distinctive features: extensive patterned russet, regular shape, smooth eye. Similar variety: Fillbarrel.
- Backwell Red** (1964) . . . Distribution: included in some of the earliest trial orchards (planted before 1920), of limited local distribution around Backwell in North Somerset. Mature tree characters: medium sized, with a spreading habit forming a neat compact head. Distinctive features: one-sided stem basin; fruit falls over a long period. Similar varieties: Foxwhelps, Fair Maid of Devon.
- Belle Norman** . . . Distribution: scattered old trees found in Herefordshire and parts of Gloucestershire and Monmouthshire; distributed in remaining cider counties in 1934 series of bush orchards. Mature tree characters: medium to large sized, spreading habit. Distinctive features: "Bell" shape often pronounced, dark green skin colour. Similar variety: Broadleaf Norman.
- Breakwell's Seedling** (1962) . . . Distribution: as mature trees at Perthyre, Monmouth; as young trees less than fifteen years old around Hereford. Mature tree characters: medium sized, upright, with dark, luxuriant foliage. Distinctive features: corona present around eye; soft-fleshed, easily bruised, quickly breaking down. Similar varieties: Foxwhelps.
- Brown's Apple** . . . Distribution: South Devon as mature trees, and in the 1957 series of trial orchards. Mature tree characters: medium sized, slightly spreading, neat head. Distinctive features: flattened shape; thick often strigged stem.
- Brown Snout** (1962) . . . Distribution: mature trees found in Herefordshire where it is widely planted; as young bush trees in the 1952 series of trial orchards in all cider growing counties; a few young standards are found outside Herefordshire. Mature tree characters: medium sized, upright growth. Distinctive features: distinct patch of russet around eye, hence Brown Snout. Similar varieties: occasionally this variety may be confused with Michelin, from which it can be distinguished by the absence of ribs and by its regular conical shape.

- Brown Thorn** Distribution: limited numbers in Herefordshire; in the 1957 series of trial orchards; some recent planting in Somerset. Mature tree characters: large to medium sized untidy, spreading head. Distinctive features: heavy russet covering practically the whole of the fruit; brown flush. This is a promising variety which crops well and will probably be planted more frequently in future.
- Bulmers Norman** (1961) Distribution: widely planted throughout all the cider growing counties; also used as a stem builder. Mature tree characters: large, very vigorous, a spreading tree often with a span of up to 40 feet, with large leaves; popular as a stem builder. Distinctive features: large fruit size; irregular eye basin; large russeted stem basin.
Syn: White Muscadet
- Cap of Liberty** Distribution: a central Somerset variety originating in the Martock area where it was grown in moderate numbers during the last century, the few remaining trees are old; included in the trial orchards planted before 1920. Mature tree characters: medium sized; consisting of several long, unbranching, spreading limbs. Distinctive features: small fruit size; often severely infected with scab; eye basin absent. Similar varieties: probably related to other central Somerset sharp varieties such as Porter's Perfection and Lambrook Pippin.
Syn: Red Soldier
- Cherry Norman** Distribution: old trees rarely found in the Morden district of Herefordshire; included in some of the trial orchards planted before 1920 but not planted since. Mature tree characters: very large, upright growth. Distinctive features: the small, regular, round shape, the absent stem basin and the pink-red flush emphasise the Cherry like appearance.
Syn: Hitterley
- Cherry Pearmain** Distribution: rarely found in Herefordshire where it probably originated; some of the trial orchards planted before 1920 contained a few trees of this variety but it has not been planted since. Mature tree characters: medium sized, compact rather upright head. Distinctive features: soft-fleshed; dessert flavour. Similar varieties: Foxwhelps, Fair Maid of Devon, Cowarne Red, Skyrme's Kernel.
- Chisel Jersey** (1964) Distribution: fairly common in Somerset, in larger numbers in the Martock area where it originated; it has been included in the 1950 series of trial orchards. Mature tree characters: large, semi-spreading; grey-green foliage. Distinctive features: stalk usually offset, tendency to strigging; large fruits do not show the snouted appearance implied by the word "Jersey"; sensitive to virus infection, indicated by heavy cracking and russetting. Similar varieties: Dabinett is probably a seedling of Chisel Jersey; Sandford Jersey was distributed in Herefordshire under the name Chisel Jersey but can be distinguished with some difficulty from the latter by the presence of a strong fruity smell and the absence of the offset stem.
Syn: Sidestalk Jersey; Bitter Jersey; Jersey Chisel
- Cider Lady's Finger** (Type) Distribution: several varieties of this name are known in Herefordshire, Gloucestershire and Somerset. They are not widely distributed and are only infrequently found. Distinctive features: fruit length is usually twice as great as fruit width.
- Court Royal** (1961) Distribution: frequently found in Somerset and East Devon; it was included in the 1952 bush trial orchards. Mature tree characters: large, a vigorous grower forming a spreading tree. Distinctive features: large fruit size, deep open eye, free, upright sepals. Similar varieties:

- bears a distinct similarity to Bramley's Seedling in everything but taste.
- Cowarne Red** Distribution: rarely found in Herefordshire where it originated in Much Cowarne over 200 years ago; it was included in the trial orchards planted before 1920 but has not been widely planted since. Mature tree characters: large and spreading. Distinctive features: none. Similar varieties: Foxwhelps, Fair Maid of Devon, Cherry Pearmain.
- Crimson King (1963)** Distribution: mature trees in Western Somerset and adjacent parts of Devon; included in recent plantings throughout Somerset. Mature tree characters: very large, a vigorous grower forming a spreading tree. Distinctive features: dark red, striped flush, deep open eye, large size.
Syn: John Toucher's, Bewley Down Pippin; Jackson's
- Cummy Norman** Distribution: now very rare in both its native Radnorshire and in Herefordshire and Gloucestershire where it has not been planted for about 50 years; it was included in some of the earliest trial orchards. Mature tree characters: large, vigorous and semi-spreading. Distinctive features: deep, irregular eye, short, cylindrical shape, and diffuse brownish flush. Similar varieties: Silver Cup, from which it can be distinguished by the absence of elongated fruits.
- Dabinett (1961)** Distribution: common in many Somerset orchards; it was included in several series of trial orchards and is now widely grown throughout the cider growing counties. Mature tree characters: small and neat headed, often short lived due to virus sensitivity. Distinctive features: dark red striped flush, fruity odour, small seeds. Similar varieties: probably a seedling of Chisel Jersey from which it can be distinguished by the darker flush and the absence of strigged fruits.
- Dove (1964)** Distribution: frequently found in the Glastonbury area of Somerset and scattered throughout the rest of the county; it was included in the 1957 series of bush trial orchards. Mature tree characters: small with dense drooping branches and greyish foliage. Heavy virus infection in older trees results in marked symptoms of debility such as severe die-back. Distinctive features: waxy skin. Similar varieties: Dabinett, Yarlinton Mill.
- Duffin** Distribution: rarely found in Cornwall and west Devon; included in the 1957 series of trial orchards. Mature tree characters: medium sized with erect dense head. Distinctive features: dry, often heavily russeted skin; soft fleshed, quickly breaking down.
- Ellis Bitter (1963)** Distribution: quite frequently found in its native Devonshire and included in the bush series of trial orchards planted in the 1930's. Mature tree characters: frequently quite large with spreading habit. Distinctive features: heavily flecked flush which sometimes has a bluish tinge; does not keep well. Similar varieties: Major is similar in general fruit characters, but is small or medium whereas Ellis Bitter is medium and usually large.
- Fair Maid of Devon** Distribution: now only infrequently found in parts of East Devon; also included in some of the bush trial orchards of the 1930's. Mature tree characters: medium sized, with a compact spurring habit. Distinctive features: rounded base; soft fleshed—will not keep. Similar varieties: it can be distinguished from the Foxwhelps which

- are rather irregular and pointed nosed, by its regular, round shape.
- Fillbarrel** Distribution: a few old trees are still found in the North Cadbury area of Somerset; it was included in the trial orchards planted in 1957. Mature tree characters: medium sized, compact head, spreading habit. Distinctive features: regular conical-cylindrical shape, smooth eye basin, patterned russet. Similar variety: Ashton Brown Jersey.
- Foxwhelps (Group)** Distribution: young Bulmer's Foxwhelp trees are found in Herefordshire as a result of limited plantings in the 1930's. Red Foxwhelp was included in standard trial orchards planted in the early 1950's. Improved Foxwhelp was included in the earliest trial orchards planted before 1920. A few very old trees of Russet and Old Foxwhelp are found in parts of Herefordshire and Gloucestershire. Mature tree characters: medium or large sized, with upright limbs; the leaves are characteristic and are curled and wavy. Distinctive features: extreme acidity, markedly striped flush, irregular shape, corona frequently present. Similar varieties: Hereford Redstreak and Fair Maid of Devon.
- Frederick (1962)** Distribution: Monmouthshire and adjacent parts of Gloucestershire; it was included in the earliest trial orchards planted before 1920. Mature tree characters: small or medium sized, a rounded open head; on some of the richer soils in Somerset a large tree is formed. Distinctive features: dull dark red flush, round shape, flesh sometimes flushed red. Similar varieties: the fruit characters indicate a relationship of the Foxwhelps but are sufficiently different to prevent confusion.
- Fréquin Rouge** Distribution: found in some of the Herefordshire orchards planted about 30 years ago. Mature tree characters: medium sized, spreading. Distinctive features: small, base narrow and rounded, flush bright red.
- Gatcomb** Distribution: fairly frequently found in the Glastonbury area of Somerset and in the North of the county; *Syn: Gin* distributed to other counties in the earliest trial orchards planted before 1920. Mature tree characters: medium sized with dense round head. Distinctive features: dry, yellow skin, fairly strong ribbing, stems absent in "off" year in king fruits.
- Hangdown (1964)** Distribution: throughout Somerset and adjacent parts of Devon; distributed to other counties in a few trial orchards. Mature tree characters: medium or small sized, fairly compact head with a characteristic drooping habit. Distinctive features: rounded base, small loculi filled with seeds, small fruit size. Similar variety: Cherry Norman, from which it can be distinguished by the absence of extensive russet on the cheek.
- Harry Master's Jersey (1964)** Distribution: in most parts of Somerset; it was included in the earliest trial orchards planted before 1920. Mature tree characters: medium or small sized, a fairly compact head. Distinctive features: strong tendency to "snouting"; bluish tinge to flush. Similar varieties: Yarlinton Mill and Harry Master's Jersey are probably seedlings with the same parents.
- Hereford Redstreak** Distribution: in some of the earliest trial orchards planted before 1920. Mature tree characters: medium sized with spreading open head. Distinctive features: prominent striping; sharp culinary flavour. Similar varieties:

- Foxwhelps, Fair Maid of Devon—it is difficult to separate these varieties and strict attention to the wording of the questions in the Key is necessary.
- Kingston Black** (1961) . . . Distribution: found throughout the cider growing counties and more frequently in its native Somerset, numbers of trees have declined steadily during the last 20 years. Mature tree characters: size depends greatly on incidence of scab and canker, and on soil type; thin open spreading head usually formed of long unbranching limbs. Distinctive features: very dark red flush, dry skin, rich, fruity flavour. Similar varieties: probably related to other central Somerset sharp varieties such as Cap of Liberty which shows similar tree characters as well as being of high vintage value.
- Syn:* Black Taunton
- Knotted Kernel** (1962) . . . Distribution: in many of the trial orchards planted up to 1940. Mature tree characters: very large, upright, vigorous growth, leaves are curled and wavy, slow to come into crop. Distinctive features: bright red waxy fruits; strongly ribbed from eye; stem often exceptionally long.
- Lambrook Pippin** . . . Distribution: Somerset; its use as an interstock forming the trunk and main branch framework has caused this variety to be more widespread than its cider quality would allow; its strong vigorous growth has often formed a new head, outgrowing the less vigorous and more disease susceptible varieties head-worked onto it. Mature tree characters: medium sized, vigorous growth forming dense trees. Distinctive features: small fruit size; prominent lenticels. Similar varieties: Lambrook Pippin is probably closely related to Porter's Perfection, Cap of Liberty and Kingston Black.
- Lavignée** (1962) . . . Distribution: distributed in Herefordshire since the 1920's following introduction from France; included in the 1957 series of trial orchards and present as young trees in some Somerset orchards. Mature tree characters: medium sized with thin open head. Distinctive features: rounded base; very irregular shape; stem thick, often swollen at junction with fruit. Similar varieties: Sweet Coppin (see description).
- Syn:* Belle de Douai
- Lebret** . . . Distribution: only in the trial orchard series planted in 1957. Mature tree characters: vigorous grower forming a medium to large tree with a dense head. Distinctive features: ribbed eye basin and dry skin.
- Major** (1964) . . . Distribution: adjacent areas of Somerset and Devon, infrequent; also in the earliest series of trial orchards planted before 1920. Mature tree characters: medium or large sized, round headed with spreading limbs. Distinctive features: early falling and will not keep—soft fleshed. Similar varieties: typical Jersey apple and may be confused with Ellis Bitter, or Harry Master's Jersey.
- Médaille d'Or I** (1962) . . . Distribution: mainly in Herefordshire where it was introduced from France in the early 1920's; also found in the other cider growing counties and in the 1952 series of trial orchards. Mature tree characters: small, dense, round head, very susceptible to breakage. Distinctive features: virtually complete golden russet; large, ribbed eye basin; tannin very heavy and harsh.
- Syn:* Spreading Médaille d'Or
- Michelin** (1961) . . . Distribution: extensively planted in Herefordshire since the 1920's and now widely planted also in the other cider growing counties; included in several series of trial

- orchards. Mature tree characters: medium sized with stiff upright limbs. Distinctive features: usually strongly ribbed and angular. Similar variety: Brown Snout.
- Morgan Sweet** (1963) . . . Distribution: throughout Somerset where it has been used as an interstock, also less frequently in Devonshire and Gloucestershire; only found now as mature or old trees. Mature tree characters: large, with spreading limbs; large leaves. Distinctive features: usually the first variety to be harvested; King fruits rather elongated. Similar varieties: Bulmer's Norman and Néhou (in "off" years) both these being distinguished by the presence of a moderate amount of tannin.
- Néhou** (1962) . . . Distribution: introduced into Herefordshire in the 1920's and now fairly well known in this county; distribution outside Herefordshire has been very rare and is confined to the trial orchard series of 1957. Mature tree characters: medium sized, round head of dense twiggy growth. Distinctive features: when ripe it becomes greasy, buttery-yellow and easily bruised. Similar varieties: Reine des Hâtives, from which Néhou can be distinguished by its absence of a constricted funnel shaped tube; and mature on year samples of Morgan Sweet from which Néhou can be distinguished because of the fairly heavy tannin content.
- Northwood** (1962) . . . Distribution: Devon and parts of South West Somerset; included in some of the earliest trial orchards planted before 1920, and also in the 1957 series. Mature tree characters: medium to large sized, a neat round head, which bears fruit throughout the tree. Distinctive features: none, a typical Devon, sweet cider apple.
- Pennard Bitter** . . . Distribution: local, in the Glastonbury area of Somerset, particularly near the parish of West Pennard. Mature tree characters: large, spreading habit. Distinctive features: flattened shape; heavy extensive russet.
- Porter's Perfection** (1962) . . . Distribution: common in the Martock area of Somerset and less regularly in remaining areas of Somerset; it was included in some of the early trial orchards and the 1957 series. Mature tree characters: large or medium sized, a vigorous grower with spreading habit and drooping branches. Distinctive features: fruits borne in tight clusters of four or five fruits, fused apples usually present in any sample of fruit, lenticles large. Similar variety: Lambrook Pippin.
- Red Jersey** (1963) . . . Distribution: scattered throughout Somerset and adjacent parts of Devon. Mature tree characters: medium to large sized, with a spreading habit, and heavy complex spur system of dense twiggy growth; the leaves are narrow, numerous and greyish in appearance. Distinctive features: small fruit size; nearly complete reddish-brown flush. Similar varieties: this variety can be mistaken in the "off" year for a sample of a small Yarlinton Mill. The key must be carefully followed at this point.
- Red Worthy** . . . Distribution: confined to the Martock area of Somerset where it is found in reasonable numbers. Mature tree characters: large, spreading, with numerous, layered, drooping branches; leaf size large. Distinctive features: bright red flush and distinct "banana" like taint to juice and sometimes flesh. Similar variety: Yarlinton Mill.
- Reine des Hâtives** . . . Distribution: following its introduction from France in the 1920's this variety has been distributed in limited numbers throughout Herefordshire; it was also included

in the 1957 series of trial orchards. Mature tree characters: medium sized with a dense twiggy head. Distinctive features: tube is constricted funnel shape. Similar varieties: Néhou, White Norman and White Jersey from which it can be distinguished by the absence of the constricted funnel shaped tube.

- Reine des Pommes** . . . Distribution: scarce; a few trees found in Herefordshire, Somerset and Devon. Mature tree characters: medium sized, spreading habit with drooping small branches. Distinctive features: distinctive, patterned, grey russet on cheek; dark red flush.
- Reinette Obry (1963)** . . . Distribution: included in some of the earliest trial orchards planted before 1920 but not widely known. Mature tree characters: medium sized with dense, spreading habit. Distinctive features: large corky lenticels; flattened shape. Similar variety: Yellow Styre, from which it can be distinguished by shape and quantity of russet.
- Royal Wilding** . . . Distribution: some old trees still remain scattered in Herefordshire and Somersetshire; it was included in some of the earliest trial orchards but has not been planted since. Mature tree characters: large with slightly spreading habit. Distinctive features: brown flush; "waisted" shape.
- Sandford Jersey** . . . Distribution: found in moderate numbers in Herefordshire as young trees less than 30 years old and in Somerset less frequently as mature trees. Mature tree characters: small or medium sized, very similar to Dabinett. Distinctive features: heavy cracking and russeting in some fruits. Similar varieties: Dabinett and Chisel Jersey.
- Syn:* in Herefordshire: Chisel Jersey
- Sherrington Norman (1962)** . . . Distribution: found mostly in Herefordshire and less frequently in the other cider growing counties, all the trees are less than 40 years old. Mature tree characters: large and vigorous with very drooping habit. Distinctive features: very long sepals; variable shape.
- Skyrme's Kernel** . . . Distribution: rarely found in Herefordshire and only found outside this county in some of the earliest trial orchards. There are no trees less than 40 years old. Mature tree characters: medium or large sized with a spreading habit. Distinctive features: none. Similar variety: Cherry Pearmain, from which Skyrme's Kernel can be distinguished by the presence of tannin.
- Slack-ma-Girdle** . . . Distribution: Devonshire and adjacent parts of Somerset. Mature tree characters: vigorous grower giving a large tree with a spreading habit. Distinctive features: flattened shape and bluish tinge to flush. Similar variety: Woodbine, from which it is very difficult to distinguish Slack-ma-Girdle except on tree characters as described in the key.
- Stembridge Jersey** . . . Distribution: confined to the Martock area of Somerset except for its presence in the 1957 series of trial orchards. Mature tree characters: medium to large sized, spreading habit. Distinctive features: none. Similar varieties: a typical Somerset "Jersey" variety.
- Stoke Red (1961)** . . . Distribution: throughout the cider growing counties mainly in trial orchards planted from 1930 onward; more frequently found in North Somerset where it originated. Mature tree characters: medium sized with a compact head and spreading habit formed of numerous, small, thick, twiggy branches. Distinctive features: fruit born throughout the tree; immune to scab.
- Syn:* Neverblight

- Strawberry Norman** Distribution: infrequently found in its native counties of Herefordshire and Worcestershire as old trees; younger trees are found in some of the trial orchards planted in the 1930's. Mature tree characters: large with long spreading limbs. Distinctive features: deep irregular eye; pronounced, striped flush.
- Sweet Alford (1962)** Distribution: in Devon as old trees, and throughout the cider growing counties as mature trees. Mature tree characters: large with slightly spreading habit, characteristic forked twigs due to tip bearing. Distinctive features: waxy yellow fruits often with diffuse pink flush associated with damage or bruising. Similar varieties: Nêhou and Reine des Hâtives which are harvested earlier than Sweet Alford.
- Sweet Coppin (1961)** Distribution: in Devon as old trees, and throughout the cider growing counties as young trees and also in many of the recent trial orchards. Mature tree characters: medium or large sized with neat round head. Distinctive features: basic shape conical though because of the preponderance of King fruits an irregular shape is often described. Similar variety: Lavignée, which is always irregular.
- Tardive Forestier** Distribution: very rarely found; included in the bush series of trial orchards planted in the 1930's. Mature tree characters: medium sized with semi-spreading habit. Distinctive features: elongated cylindrical shape with rounded base.
- Tremlett's Bitter (1961)** Distribution: in Devon as old trees, and throughout the cider growing counties as young trees in the bush and standard trial orchard series planted in the 1950's. Mature tree characters: medium to small sized, a spreading habit. Distinctive features: heavy, dark red flush, frequently complete.
- Vilberie** Distribution: frequently found in Herefordshire as young or headworked trees; and included in the bush variety trial orchards planted in 1957. Mature tree characters: large with spreading habit. Distinctive features: frequently flattened; skin dark green.
Syn: Villebéry
Vilbery
- White Close Pippin** Distribution: scarce in Somerset, its county of origin and found in other counties only in the bush variety trial orchards planted during the 1930's. Mature tree characters: medium sized with a semi-spreading habit. Distinctive features: skin white or greenish-white, sometimes heavily cracked and russeted. Similar varieties: Woodbine and Slack-ma-Girdle.
- Woodbine** Distribution: sometimes found as old trees in Devon, Somerset and Dorset and included in some of the earliest trial orchards. Mature tree characters: large with long spreading limbs. Distinctive features: distinctive striped flush often with a bluish tinge. Similar varieties: Slack-ma-Girdle which can often only be distinguished on tree characters but which sometimes has a bright red flush with no bluish tinge; and White Close Pippin which has a much higher tannin content.
Syn: Rice's Jersey
- White Jersey** Distribution: still quite frequently found as very old trees in central Somerset. Mature tree characters: small or medium sized with a neat, compact head of many spurred branches. Distinctive features: small fruit size with rounded base, flush absent. Similar varieties: White Norman which can be distinguished by its flat base,

- and Reine des Hâtives which can be distinguished by its constricted funnel shaped tube.
- White Norman** (1963) . . . Distribution: frequently found as old trees throughout Herefordshire. Mature tree characters: medium sized with a spreading habit and numerous thin, pendulous branches. Distinctive features: early harvesting, fruit bruises easily and conspicuously. Similar varieties: Reine des Hâtives, Néhou and White Jersey.
- Yarlington Mill** (1961) . . . Distribution: frequently found in all the major cider growing areas mainly as young or headworked trees. Mature tree characters: medium sized with an upright habit which tends to become spreading. Distinctive features: characteristic Somerset "Jersey" variety with pointed nose; moderate tannin. Similar varieties: Major which can be distinguished by its early harvesting and soft, easy bruising flesh; Dove which can be distinguished by the waxy nature of the skin; Harry Master's Jersey which can be distinguished by its short stem.
- Yellow Styre** Distribution: found infrequently as old trees in Gloucestershire; included in the earliest variety trial orchards. Mature tree characters: medium or large sized with a spreading habit. Distinctive features: flattened shape with dry rough skin and prominent lenticels. Similar variety: Reinette Obry.

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PLATE I



Round



Conical



Oblate



Cylindrical



Flattened-conical



Elongated-conical



Conical-cylindrical



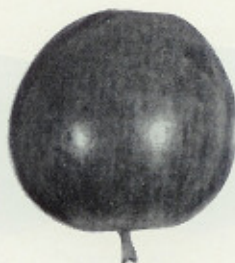
Flattened-cylindrical



Nose pointed



Nose broad
("snouted")



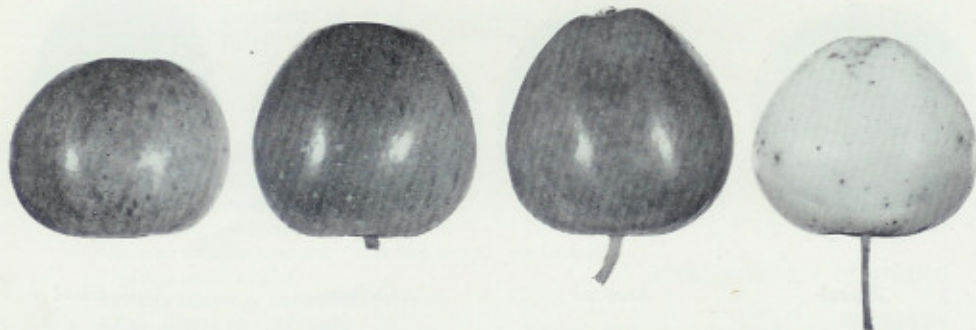
Base rounded



Base flattened

FRUIT SHAPES

PLATE II



Stem within cavity

Stem projecting slightly

Stem projecting distinctly

Stem projecting considerably



Stem bulge

Thick stem

Offset stem



Stem basin absent

Small stem basin

Large stem basin

STEMS AND STEM BASIN

PLATE III



Absent

Present—small

Present—large



Ribbed eye

Smooth eye

Irregular eye



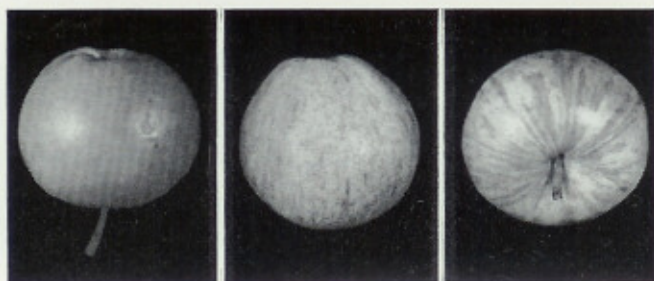
Corona around eye



Puckered eye

EYE BASIN

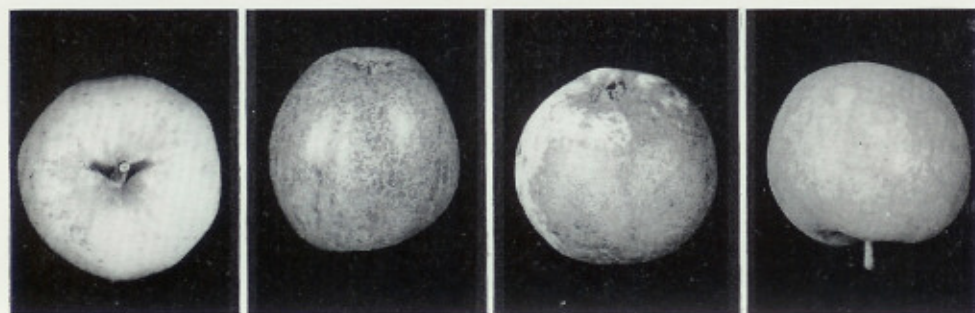
PLATE IV



Diffuse flush

Flecked flush

Striped flush

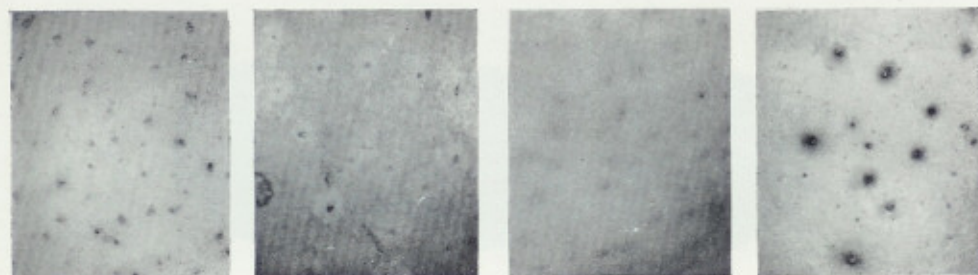


Russet in stem basin

Patterned russet

Russet spreading
on cheek

Russet complete



Conspicuous lenticels

White area surrounding
lenticels

Lenticels surrounded
by green area

Lenticels flushed

SKIN