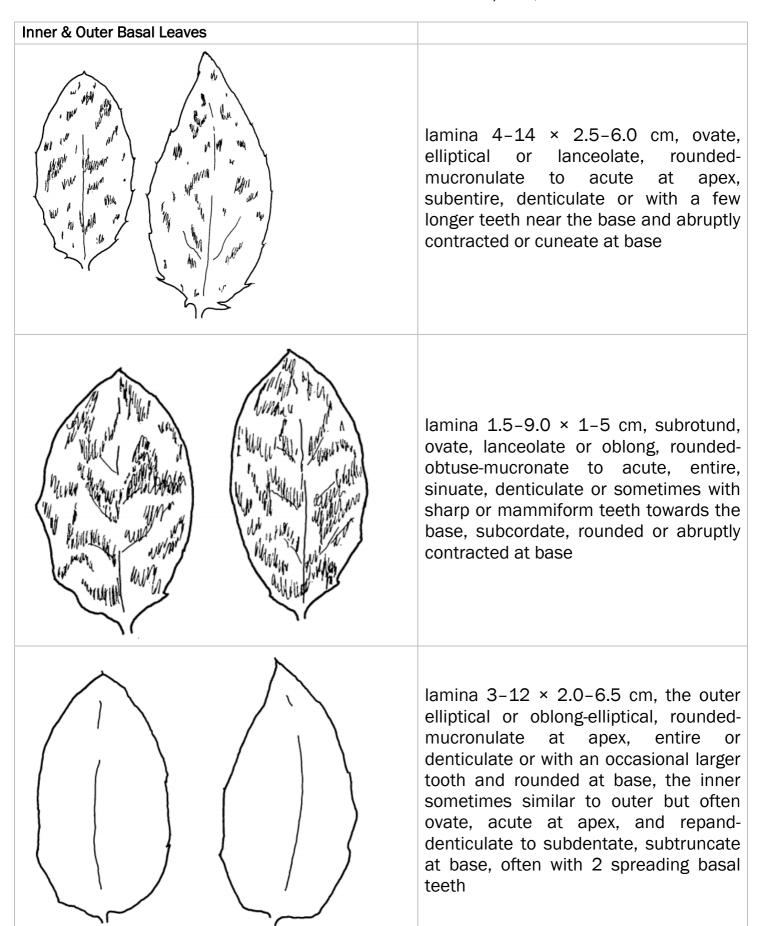
INNER AND OUTER LEAF DESCRIPTIONS

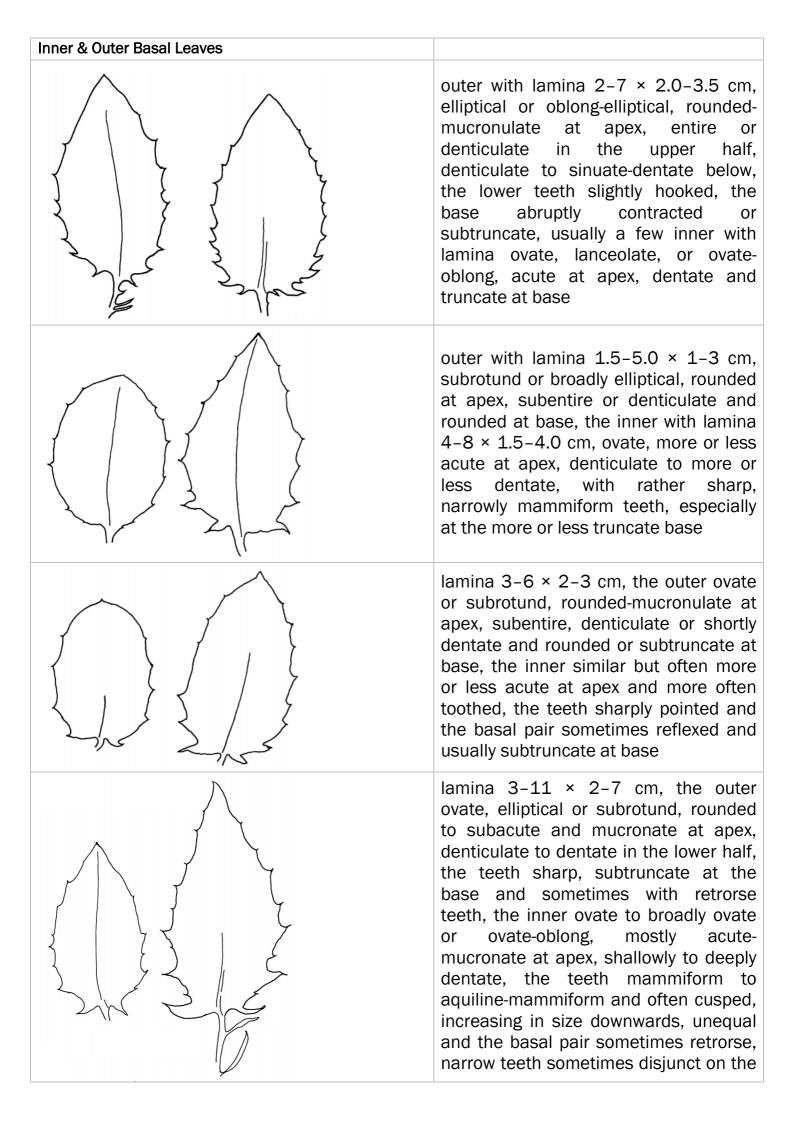
The object of this is to correlate leaf shape with description and terminology. Pictures are basal leaves from Sell matched with the OCR leaf descriptions, with id information removed



Inner & Outer Basal Leaves	
	lamina 2.5–8.0 × 1.5–3.5 cm, elliptical, ovate, ovate-lanceolate, or elliptic-oblong, rounded-obtuse to acute or long acuminate, subentire to denticulate or with a few, sharp teeth near the base and rounded or subtruncate at base
	lamina 2-6 × 1.5-3.0 cm, ovate to elliptical or subrotund, rounded-mucronate to more or less acute at apex, denticulate or with few, small teeth towards the rounded or truncate base
	2-9 × 1-5 cm, ovate, elliptical or lanceolate, obtuse-mucronate to acute at apex, usually dentate or dentate-serrate, rarely denticulate, the teeth narrow and apiculate, cuneate or subtruncate at base, the teeth sometimes descending the petioles

Inner & Outer Basal Leaves	
The state of the s	lamina 2–10 × 1–4 cm, elliptical, lanceolate or ovate, mostly rounded-mucronate, but the inner sometimes acute, subentire, denticulate or with a few larger teeth towards the rounded or subtruncate base
	outer with lamina 3-9 × 1.5-4.0 cm, broadly elliptical or elliptical, usually obtuse-mucronate at apex, subentire or denticulate, and rounded or shortly cuneate at base, the inner with lamina 4-11 × 1.5-4.5 cm, elliptical, ovate or lanceolate, more or less acute at apex, subentire, denticulate or with a few, small teeth near the base and abruptly contracted or shortly cuneate at base
	outer with lamina 2–5 × 1.5–3.0 cm, elliptical, ovate, or subrotund, rounded-obtuse at apex and entire, denticulate or with a few, small teeth at the rounded, subtruncate or abruptly contracted base; the inner with lamina 3–8 × 1.5– 4.0 cm, ovate or lanceolate, rarely oblong, acute or acuminate at apex, subentire, denticulate or with a few teeth at the subtruncate base

Inner & Outer Basal Leaves	
	lamina 2-11 × 1.2-6.5 cm, the outer and sometimes all elliptical, ovate or subrotund, rounded-obtuse at apex, entire or with a few teeth in the basal half and rounded at base, the inner sometimes more acute, with more prominent, narrowly mammiform teeth and their bases subtruncate and sometimes with retrorse teeth
	large and cabbagy, with lamina 2–10 × 1.5–6.0 cm, broadly ovate or broadly elliptical, sometimes nearly subrotund, mostly shortly acute, rarely rounded-mucronulate at apex, regularly dentate or serrate-dentate, the teeth sharp, apiculate, and sometimes curved, truncate, abruptly contracted or shortly cuneate at base
	outer with lamina 3.5–8.5 × 2.5–4.5 cm, elliptical or broadly elliptical, rounded-mucronulate at apex, denticulate or sinuate-dentate, rounded or abruptly contracted and often asymmetrical at base, the inner with lamina 4–12 × 2–5 cm, ovate, elliptical or slightly oblong-ovate, more or less acute at apex, denticulate to shortly sinuate-dentate and sometimes with a few, larger teeth at base

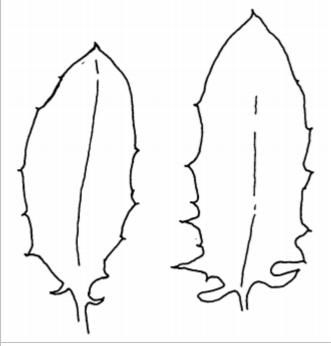


petiole, and subtruncate at base

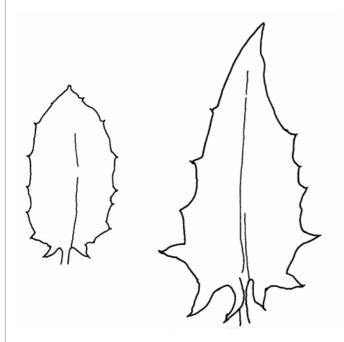
lamina $2-7(-9) \times 1-4$ cm, the outer lanceolate. roundedovate or mucronulate to more or less acute at apex, denticulate throughout or dentate in the lower half, the teeth mammiform, subtruncate and sometimes with retrorse teeth at base, the inner all ovate, acute and often twisted at apex, denticulate throughout or dentate in the lower half, the teeth mammiform, the base subtruncate and often with retrorse teeth

the outer or all with lamina $3-11 \times 2-6$ cm, ovate or subrotund, rounded at apex, with 2, large, reflexed basal teeth and sometimes other shallower ones above, subtruncate or subcordate at base, the inner all with lamina ovate, acute-mucronate at apex, with mammiform or aquiline-mammiform, unequal teeth in the lower half, the 2 lower often reflexed, occasionally only denticulate, subtruncate at base

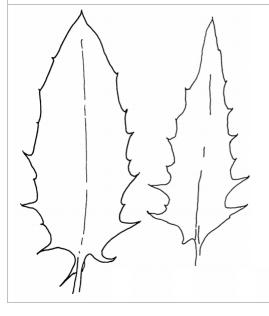
lamina 2–11 × 2–6 cm, the outer ovate, broadly ovate, broadly elliptical, broadly oblong or subrotund, broadly rounded-mucronulate at apex, deeply and irregularly dentate in all except the uppermost quarter, the teeth narrowly to broadly mammiform and often curved, and usually with 2 reflexed teeth at the truncate base, the inner with lamina ovate or lanceolate, acute or acuminate at the often twisted apex, usually deeply and very irregularly dentate, the teeth narrower, longer and more irregular than those of the outer



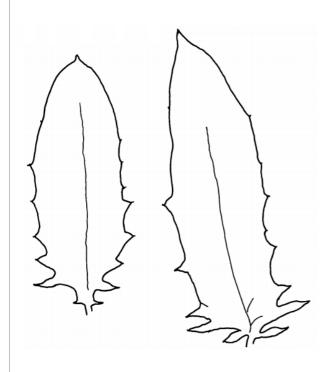
lamina 2- $5(-9 \text{ cult.}) \times 1.5-3.0(-4.0)$ cult.) cm, the outer elliptical, oblong or ovate, rounded-mucronate at apex, subentire to dentate and rounded or truncate at base, the inner with lamina ovate or oblong-ovate or obovate, more less acute at apex, dentate. becoming deeply so, and often retrorse descending the petiole cultivation, the teeth narrowly mammiform or aquiline-mammiform, subtruncate at base

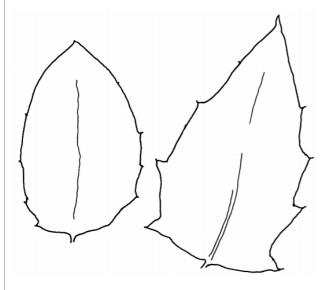


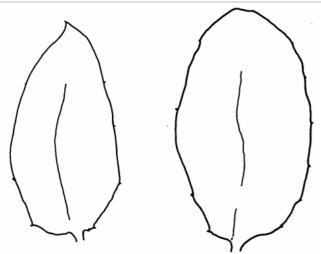
lamina $2-10 \times 2-5$ cm, the outer elliptical, ovate or subrotund, roundedmucronulate at apex, denticulate to dentate mainly in the lower half and often with 2 reflexed teeth at the base and round, truncate or subcordate at base, the inner with lamina lanceolate, or oblong-ovate, acute acuminate or caudate at the often twisted apex, shallowly to deeply dentate, the teeth irregular, flattened mammiform, broadly mammiform or narrowly mammiform and sometimes cusped, the 2 basal usually large and reflexed and sometimes with a few teeth on the petiole, more or less truncate at base



with lamina $3-12 \times 2.0-5.0$ cm, the outer lanceolate to ovate, rounded-mucronate to acute at apex, entire to denticulate or with a few basal teeth and more or less truncate at base, the inner with lamina lanceolate to oblong-lanceolate, acute to long-acuminate at apex, denticulate to deeply dentate





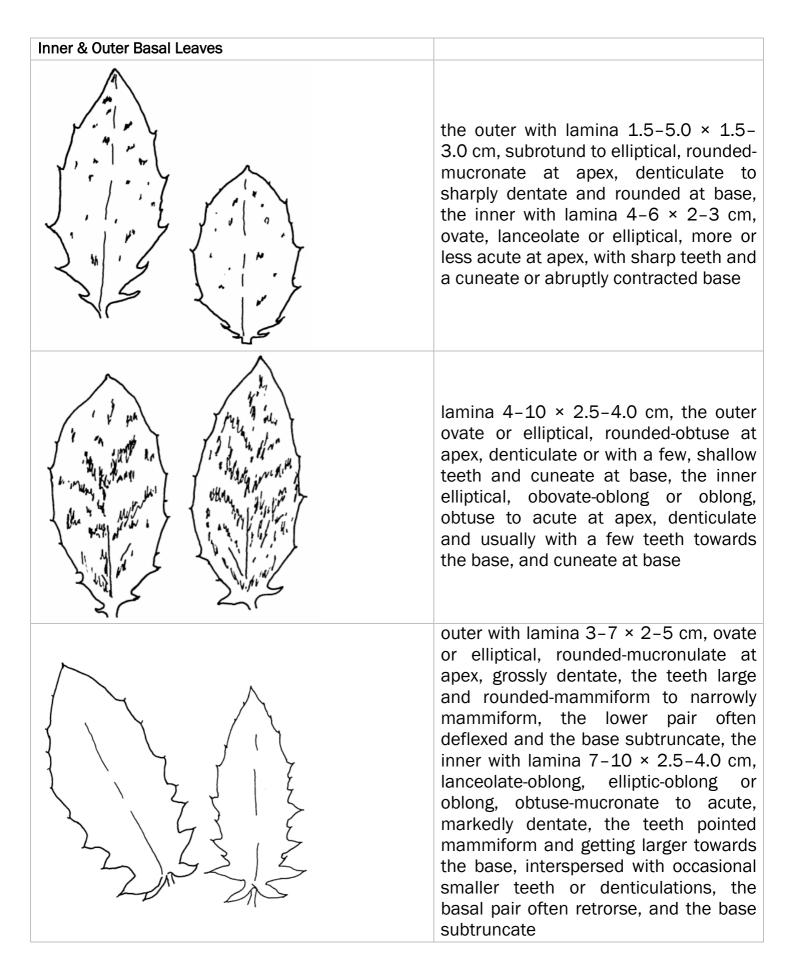


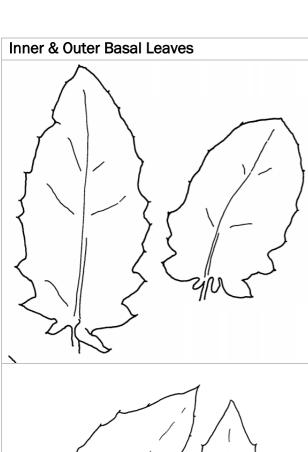
lamina $2-9 \times 1.5-4.0$ cm, elliptical, sub-rotund, oblong-elliptical or ovateelliptical. rounded-obtuse-mucronate. sinuate-dentate in the lower half, sometimes with a few mammiform teeth, and abruptly contracted or subtruncate at base to a fairly short petiole, the inner with lamina 4-10 × 1-3 cm, oblong, oblong-lanceolate, lanceolate, narrowly elliptical, more or less acute to acuminate at apex, dentate. with narrow to broad mammiform teeth in the lower half and abruptly contracted to subtruncate at base with rather long, long-hairy petioles, sometimes all the leaves are like the outer and sometimes all like the inner

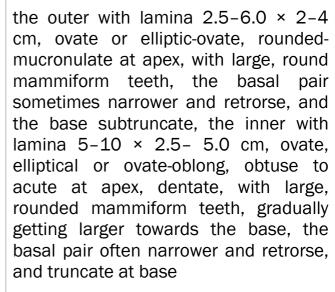
outer with lamina $4-10 \times 1.5-5.0$ cm, broadly lanceolate to ovate subrotund, rounded-obtuse-mucronate at apex, entire, denticulate or with a few widely spaced teeth which are narrowly mammiform and sometimes pointed downwards, and rounded, cuneate or subtruncate at base to fairly short petioles, the inner with lamina 4-11 × cm, lanceolate, elliptical narrowly to broadly ovate, acute to acuminate at apex, dentate to serratedentate, the teeth narrow, cuneate at base to short, long-hairy petioles

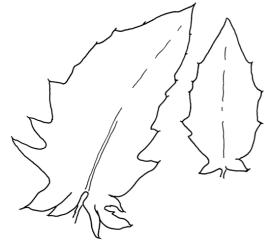
outer with lamina $2.5-5.0 \times 2-3$ cm, subrotund or ovate, rounded-mucronulate at apex, subentire to denticulate or slightly dentate and rounded or subtruncate at base, the inner with lamina $4-8 \times 3-5$ cm, mostly ovate, sometimes elliptical-ovate, mostly obtuse, sometimes more or less acute at apex and denticulate to shallowly dentate with a few, larger, often mammiform teeth near the base

Innex 9 Outer Penal Leaves	
Inner & Outer Basal Leaves	
	lamina 4–10 × 2–5 cm, oblong, ovate or ovate-oblong, mostly acute at apex, deeply and grossly dentate or serrate-dentate, the teeth long, cusped and narrowly mammiform or aquiline-mammiform, often with some teeth extending on to the petiole, subtruncate at base, some leaves sometimes less dentate and cuneate at base
A STATE OF THE STA	lamina 5–9 × 2–4 cm, ovate to oblong- ovate or oblong-lanceolate, obtuse- mucronate to acute at apex, denticulate in the upper part becoming dentate or rarely serrate-dentate in the lower part, the teeth narrowly to broadly mammiform or sometimes aquiline- mammiform, subtruncate at base
	similar except for size, the lamina 2.5–17.0 × 1–6 cm, elliptical, ovate or oblong, mostly acute at apex but sometimes obtuse, shallowly to deeply dentate, the teeth sometimes large and mammiform or long-mammiform, cuneate at base

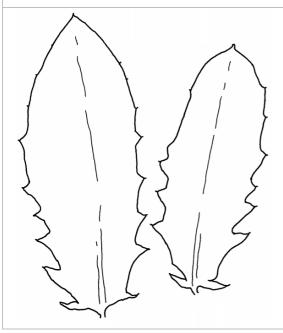




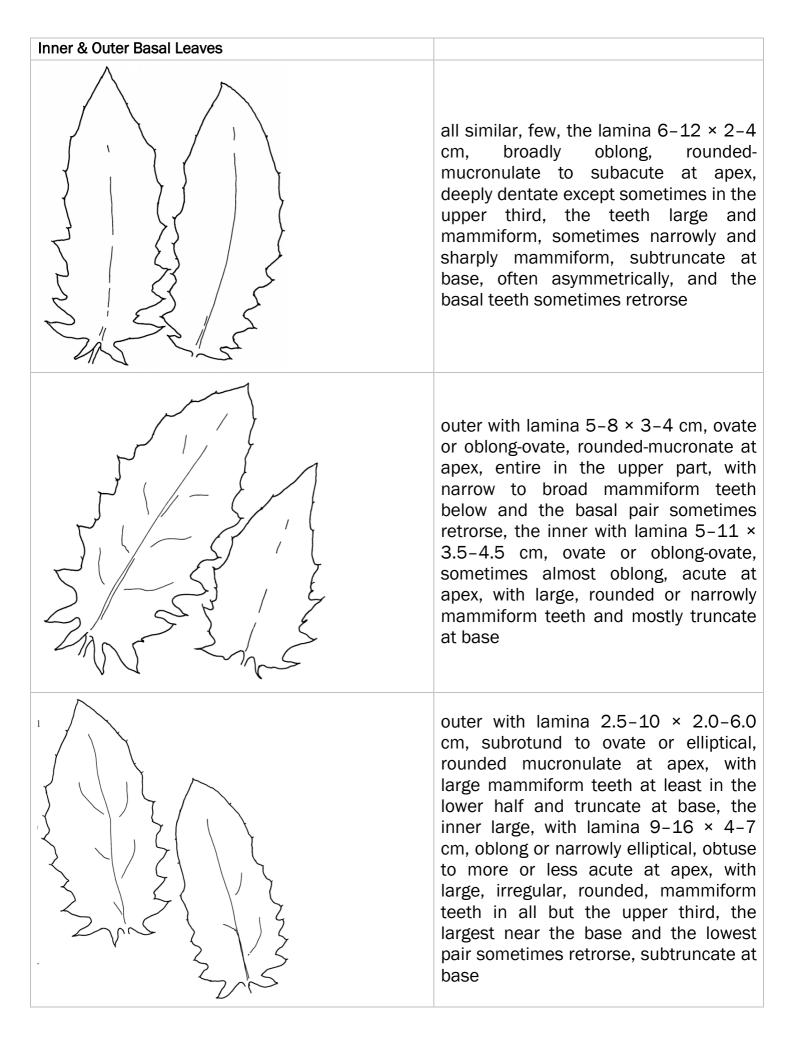


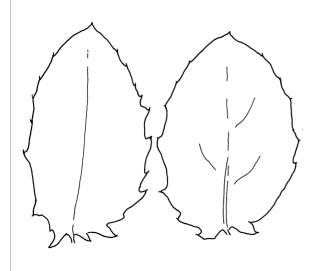


not clearly divided into outer and inner, lamina 2-9 1.5 - 4.0the lanceolate, ovate or ovate-oblong. pointed but mostly obtuse at apex, markedly dentate, the teeth unequal mostly broadly mammiform. truncate at base, often with 2 retrorse teeth, the petioles up to 8 cm, with dense, long, pale simple eglandular hairs: cauline 0-1. with lamina lanceolate or ovate, pointed or caudate at apex, markedly dentate with large mammiform teeth, subtruncate at base

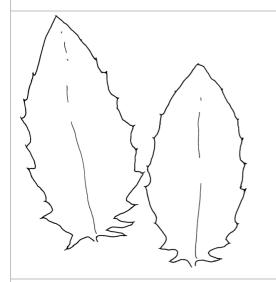


outer with lamina $6-8 \times 3-4$ cm, ovate or elliptical, rounded at apex, entire or denticulate in upper half, dentate below with large mammiform teeth and subtruncate, often asymmetrically at base, the inner with lamina $8-11 \times 3.0-4.5$ cm, broadly oblong, rounded or obtuse-mucronulate at apex, dentate in the lower two-thirds with large mammiform, sometimes acutemammiform teeth, and truncate at base

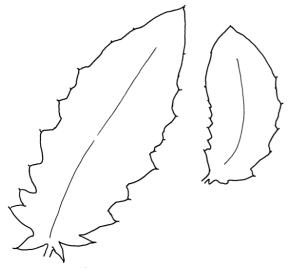




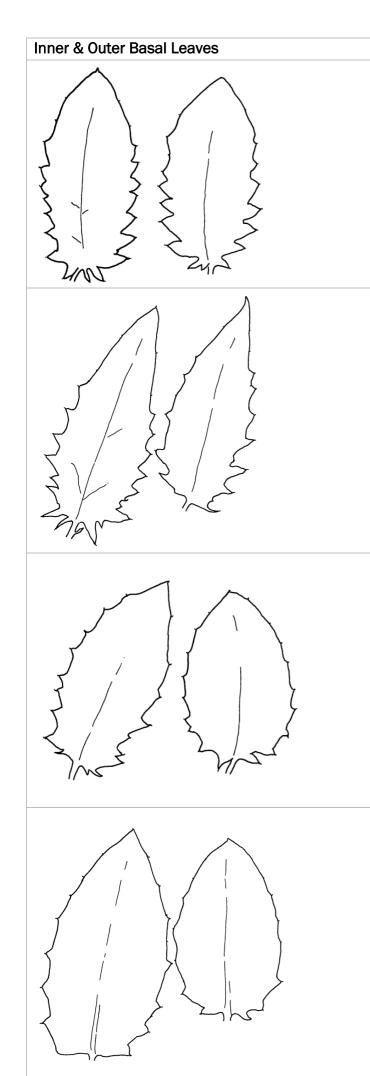
outer with lamina $3-6 \times 2-5$ cm. broadly ovate or broadly elliptical, obtuse-mucronate at apex, dentate, especially in the lower half, the teeth more or less mammiform, and truncate at base, the inner with lamina broadly elliptical or oblong-ovate, obtuse to acute at apex, dentate in the lower half with mammiform teeth and cordate to truncate at base or the sometimes similar to outer but often the lamina narrower and more acute at apex, sometimes all leaves like the outer



inner and outer not particularly distinct, $5-15 \times 2-6$ cm, ovate, sometimes broadly so, oblong-ovate or elliptical, rounded-obtuse to subacute at apex, denticulate to dentate especially in the lower half, the teeth shallowly to narrowly mammiform, sometimes with 2 retrorse ones at base, more or less subtruncate



the outer with lamina 2–12 × 1.5–6.0 cm, elliptical to broadly ovate or oblong, rounded to obtuse at apex, often entire towards the apex and denticulate to dentate below, the teeth sharp and apiculate and rounded, truncate or subcordate at base, the inner with lamina ovate or oblong, usually more or less acute at apex, more deeply dentate, the teeth usually narrowly mammiform or aquiline-mammiform and the basal pair sometimes long and retrorse

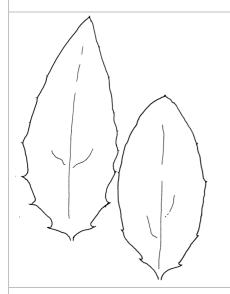


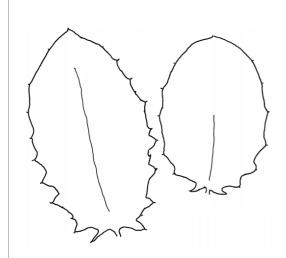
outer with lamina $5-7 \times 2-4$ cm, ovate or elliptical, rounded-mucronulate at apex, dentate, with numerous, shallow, mammiform teeth in the lower two-thirds and a truncate base, the inner with lamina oblong, oblong-elliptical or elliptical, acute at apex, dentate in the lower two-thirds, the teeth narrowly mammiform and the lower pair often retrorse

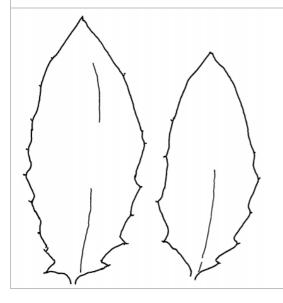
all fairly similar except in size, the lamina $3-12\times2-5$ cm, lanceolate, lanceolate-oblong, ovate or ovate-oblong, most more or less acute at apex, some narrowed to an obtuse apex, irregularly dentate, the teeth of various sizes, mammiform or narrowly mammiform and spreading, the basal pair sometimes retrorse, the teeth interspersed with a few denticulations, mostly subtruncate at base

outer with lamina $4-10 \times 2.5-6.0$ cm. subrotund. broadly ovate, broadly elliptical, broadly rounded and mucronulate to obtuse at apex. undulate-dentate, the teeth more or less mammiform and truncate at base with the basal pair of teeth often retrorse, the inner when present, with lamina $6-10 \times 2.5-5.0$ cm, elliptical or oblong-elliptical, subobtuse to more or less acute at apex, toothed like the outer

outer with lamina $2-9\times2-6$ cm, subrotund, ovate, elliptical or oblong-elliptical, rounded-mucronulate at apex, subentire to shallowly and broadly sinuate-dentate and sometimes with larger teeth at the base which is rounded, truncate or subcordate, the inner with lamina $6-14\times3-7$ cm, mostly elliptic-oblong to ovate-oblong, more or less acute or acuminate at apex, dentate, often with large, mammiform teeth, sometimes with the teeth sharper, the lower pair often





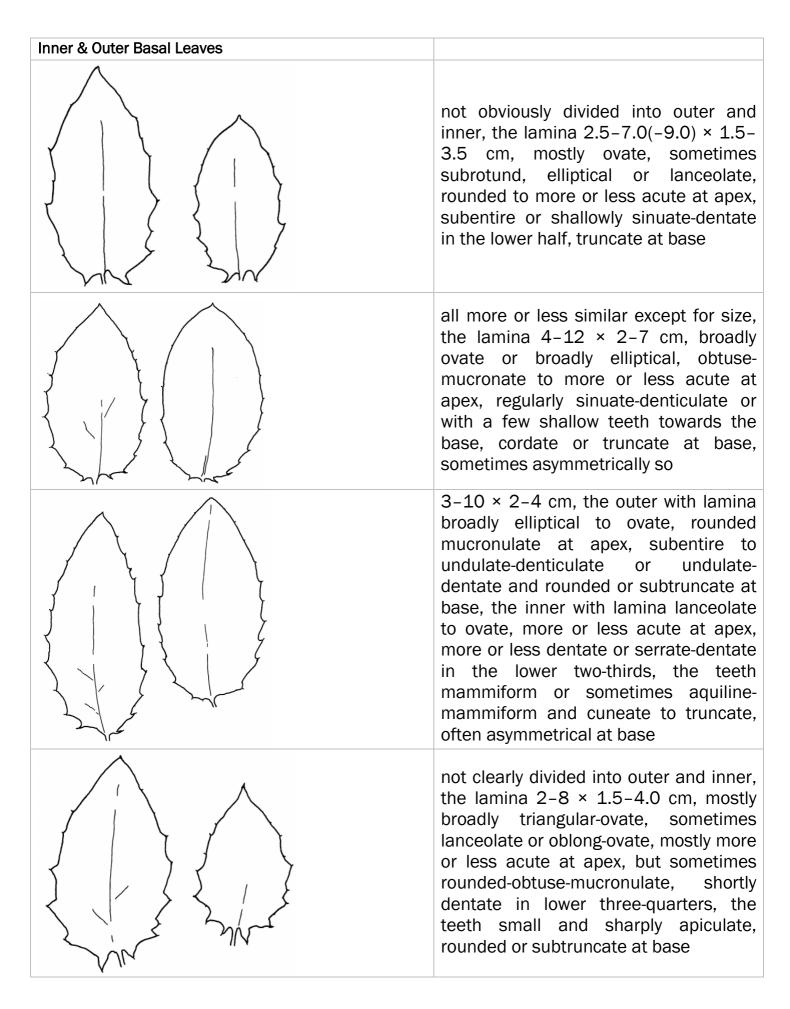


retrorse, truncate or subcordate at base outer with lamina $7-10 \times 4-5$ cm, elliptical or ovate, narrowed, but obtuse at apex. subentire or sinuatedenticulate sinuate-dentate and or cuneate to rounded or subcordate at base, the inner with lamina $4-14 \times 3-8$ cm, broadly ovate, ovate-elliptical or acute, oblong-elliptical, shortly acuminate or cuspidate apex. at sinuate-dentate, the teeth mammiform or sharply mammiform, the lowest pair sometimes cusped or retrorse, cuneate, truncate or subcordate at base

outer with lamina 3-10 × 2-6 cm, at least one of them large and subrotund or very broadly elliptical, sometimes ovate-elliptical, rounded-mucronulate at apex, sinuate-dentate in the lower half, sometimes denticulate in the upper half and rounded, truncate or subcordate at base, the inner with lamina $6-9 \times 2.5-$ 6.0 cm, usually ovate or elliptical, roundedelliptic-ovate, sometimes obtuse to more or less acute at apex. sinuate-dentate. with the teeth mammiform or sharply mammiform, and truncate or subcordate at base

outer with lamina $2-9 \times 1.5-4.5$ cm. subrotund, ovate, elliptical or oblongelliptical, obtuse-mucronulate subentire subacute at apex, or shallowly dentate towards the base and rounded or subcordate at base, the inner with lamina $4.0-10.5 \times 1.5-4.0$ cm, often oblong-elliptical, sometimes ovate, elliptical or lanceolate, more or less acute at apex, subentire, dentate or sinuate-dentate, the teeth usually shallow and sharply pointed and cuneate to subcordate at base

Inner & Outer Basal Leaves	
	spotted and blotched hardly divided into outer and inner, the lamina 4–10 × 2.5–4.0 cm, oblong-elliptical, oblong-lanceolate, oblong or ovate, narrowed to a rounded-mucronate point, entire in the upper third, dentate in the lower two-thirds, the teeth getting longer towards the base and mammiform or narrowly mammiform with a long mucro at tip, subtruncate at base
All the state of t	spotted and blotched not clearly differentiated into outer and inner, the lamina 5.5–7.0 cm, lanceolate, ovate or elliptic-oblong, narrowed and mucronulate to acute at apex, entire in the upper half to denticulate or shallowly serrate below, the teeth narrow and sharp, subtruncate at base
	not divisible into 2 kinds, the lamina 2.5–6.0 × 1.5–2.5 cm, ovate or lanceolate, sometimes oblonglanceolate, acute at apex, dentate with regular small teeth in the lower half, truncate or cuneate at base
	not distinctly divisible into 2 kinds, with lamina 2-8 × 1.5-3.5 cm, ovate, lanceolate or oblong-lanceolate, obtuse-mucronate to acute at apex, subentire to denticulate or with a few sharp teeth at the base, subtruncate or rounded at base



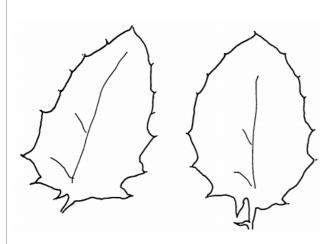
Inner & Outer Basal Leaves	
	outer with lamina $3-7 \times 1.5-4.0$ cm, ovate, oblong or oblong-ovate, rounded-obtuse at apex, entire or with minute denticulations and subtruncate, rounded or subcordate at base, the inner with lamina $6-8 \times 2.0-3.5$ cm, narrowly elliptical, ovate or lanceolate, more or less acute at apex, entire or minutely denticulate, and rounded or subcordate at base
	lamina 2–10 × 2.0–3.5 cm, the outer elliptical or ovate, obtuse at apex, entire or denticulate and rounded at base, the inner with lamina oblong, elliptic-oblong or lanceolate, usually acute at apex, entire or denticulate and sometimes with a few, larger, more or less acute teeth near the base
	lamina ovate, elliptical, lanceolate or more rarely subrotund, rounded-obtuse to acute at apex, entire, remotely denticulate or with a pair of mammiform teeth at the base, rounded or subtruncate at base
	outer with lamina $2-8 \times 2-4$ cm, subrotund, ovate or elliptical, obtuse-mucronate to broadly rounded at apex, entire to faintly undulate-denticulate or sometimes with a few obscure teeth, and truncate or cordate at base, the inner with lamina $6-11 \times 3-5$ cm, ovate or oblong-ovate, more or less acute at apex, entire or with a few shallow teeth and cordate or truncate at base, sometimes the leaves are all like the outer, sometimes all like the

Inner & Outer Basal Leaves	
	inner
	not obviously divided into 2 kinds except for size, the lamina $4-10 \times 2-4$ cm, mostly elliptical or lanceolate-elliptical, rounded-mucronulate to more or less acute at apex, subentire to denticulate or shallowly sinuate-dentate near the base, rounded or truncate at base
	outer with lamina 3–11 × 2–5 cm, more or less elliptical or ovate-elliptical, rarely oblong-elliptical, rounded-mucronulate at apex, entire to denticulate or shallowly sinuate-dentate and subtruncate or subcordate at base, the inner with lamina 7–10 × 3–5 cm, mostly oblong to oblong-elliptical, obtuse-mucronate to more or less acute at apex, sinuate-denticulate or shallowly sinuate-dentate and subtruncate to subcordate at base
	outer with lamina ovate, elliptical or subrotund, rounded-mucronulate to subacute at apex, denticulate or dentate, and rounded or subtruncate at base, the inner with lamina lanceolate, ovate or elliptical, acute to acuminate at apex, denticulate to deeply dentate with sharp teeth, and subtruncate or shortly cuneate at base
	more or less similar except for size, the lamina 1.5–8.0 × 1.0– 3.5 cm, lanceolate, ovate or elliptical, most more or less acute, sometimes obtuse at apex, shallowly dentate with mammiform teeth, the upper third entire or denticulate, abruptly contracted or subtruncate at base

Inner & Outer Basal Leaves	
	lamina 4-7 × 2-3 cm, ovate, elliptical or elliptical-lanceolate, acute to acuminate or cuspidate at apex, denticulate to sinuate-serrate or sharply dentate with long, spreading teeth, subtruncate or shortly cuneate at base
	lamina 3- 7 × 1.5-3.5 cm, lanceolate, ovate or elliptical, rounded or subacute at apex, subentire or denticulate near the base, rounded or subtruncate at base
	lamina 4–10 × 2.0–4.5 cm, the outer elliptical or with lamina elliptic-lanceolate, more or less rounded at apex, undulate-denticulate, with shallow, apiculate teeth and rounded or subtruncate at base, the inner with lamina elliptical to oblong or sometimes ovate, acute at apex, undulate-denticulate to shallowly dentate, with small mammiform teeth, and subtruncate to cuneate at base
	hardly divided into outer and inner, the lamina 1.5–10.0 × 1.5–5.0 cm, subrotund, broadly elliptical or ovate, mostly rounded-mucronulate at apex, but sometimes more or less acute, subentire, denticulate or sharply and shallowly dentate, the teeth with mucros, rounded or cuneate at base



lamina $1.5-7.0 \times 1.5-3.5$ cm, ovate, obovate, elliptical or obovate-elliptical, rounded-mucronulate to broadly acute at apex, mostly denticulate or undulate-denticulate, sometimes with a few, small teeth at the subtruncate or shortly cuneate base



outer with lamina $2-7 \times 1.5-4.0$ cm, broadly ovate, subrotund or sometimes almost reniform, broadly rounded-mucronulate at apex, shallowly dentate in the lower two-thirds and truncate or cordate at base, the inner with lamina $4-9 \times 2-4$ cm, broadly ovate to lanceolate, rounded-mucronate to more or less acute at apex, denticulate to strongly dentate, with the teeth mammiform or aquiline-mammiform and the basal pair sometimes retrorse, subtruncate at base